

FLIGHT

&
The AIRCRAFT
ENGINEER.

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

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Index and Title Page for Vol. IX.

The 8-page Index for Vol. IX of "FLIGHT" (January to December, 1917) is now ready, and can be obtained from the Publishers, 36, Great Queen Street, Kingsway, W.C. 1. Price 8d. per copy, post free.

EDITORIAL COMMENT.

"Newspapers are an essential part of our war organisation."—
(Sir Auckland Geddes, Minister of National Service.)



ACCORDING to an apparently trustworthy report, the Huns are already casting about for a means of escaping the consequences of their disregard of the laws of humanity in initiating the aerial bombardment of open towns. It has been stated that overtures have been made to the Spanish

Government with a view to the latter sending a collective Note to all the belligerents, suggesting that in the interests of non-combatants, women and children, air raids on towns outside the war zone should be abandoned. Of that there is, at the moment

no official confirmation, but other information leaves no doubt at all that the Hun, as everyone anticipated he would do, is beginning to squeal at his experiences of bombing from the air. In the Bavarian Parliament, for example, a Deputy called attention to the frequency with which German towns were being sub-

jected to bombardment from the air, and appealed for an agreement whereby each side should refrain from these methods of warfare. The reply he received was of the usual unctuous kind so beloved of Hun officialdom. He was reminded that the good, kind, cultured Germans were not the first to begin this deplorable kind of thing. Not at all—it was commenced by the wicked Allies, who in this, as in the use of poison-gas and other refined methods of murder, had forced the poor Germans in self-defence to resort to a policy of reprisals. Even at this eleventh hour, if the Allies would stop their nefarious habit of dropping bombs on defenceless, harmless Huns, Germany would be only too thankful to be relieved of the painful necessity of murdering and maiming British and French women and children!

We can afford to disregard the cant and hypocrisy of the official Hun and get down to the examination of the thing on its merits. The main question of the moment is, If and when neutral proposals are made along the lines indicated, what are we going to do about them? Regarding the matter purely from the British point of view, it is as certain as anything can be that we did not inaugurate the policy of aerial frightfulness. Long enough before we had enough machines to spare for even the work of bombing the enemy's dumps and communications behind the lines in France, we had had to use ourselves to Zeppelin visitations of London, while the South-East Coast towns had become perfectly familiar with the bomb-dropping enemy aeroplane. We were practically defenceless against these raids. We had neither the number of aeroplanes sufficient to drive off these unwelcome visitors, nor were our land defences anything like adequate to our needs. So poor was our state of defence that the enemy did not trouble about concealment—he came and went by daylight, just as he listed.

But as time passed all this changed. Our building programme expanded out of all knowledge, so that we were able to allocate enough machines for home defence, in addition to supplying our overseas requirements. Now the position is that we are not only able to do both, but we have actually a sufficient surplus of machines of a suitable type to enable us to go earnestly about the work of dosing the Hun with threefold measure of his own medicine. It has been stated authoritatively that we are now turning out two machines to every one produced in Germany, and that without taking into account anything that

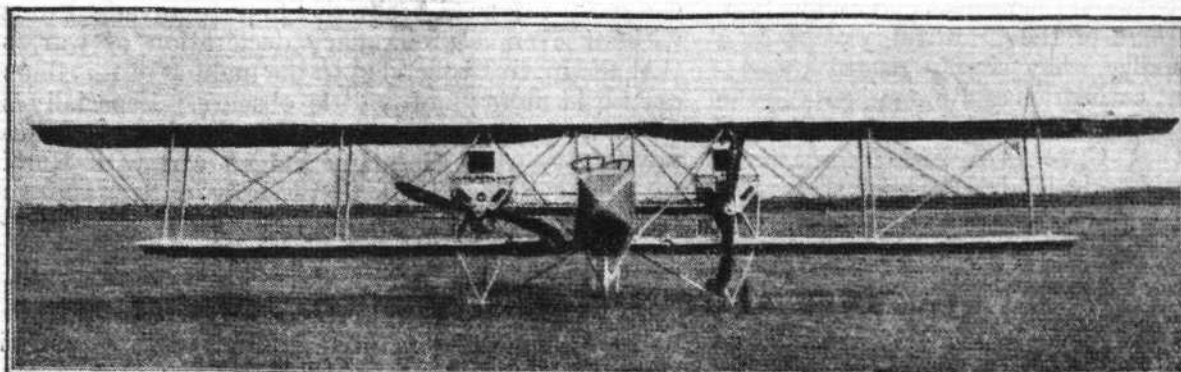
America is doing. Already we have made the Rhine-land Huns uncomfortable—and they do not like it at all. While they could read in their newspapers about the killing of English women and children by their Zeppelins and aeroplanes and were able to sleep safely in their own beds o' nights, the game was a screamingly funny one. Now that the positions have been reversed and they have had some of the game themselves, there does not seem to be the same humour in it. What, too, is ever so much worse from their point of view is that they know there is a great deal more to follow—they have only felt the preliminaries as yet. So the gentle Hun has become a bleating humanitarian who sheds salt and bitter tears over the terrible fate of Allied women and children whose cruel fate has been brought upon them by the inhuman breaches of the laws of war committed by the Allies. The truth is, of course, that the Hun realises once more that he is hoist with his own petard. The policy of "frightfulness" which is such an excellent one when it is one-sided, ceases its attraction when it recoils on the heads of its inventors. In plain terms, the Germans are deadly afraid of what they know is in store for them as soon as the weather conditions improve sufficiently to make continuous bombing raids practicable, and they would gladly enter into any sort of an agreement to escape it.

There is certainly room for two opinions as to the answer we should make. On the one hand, as we have repeatedly said, we are entirely against war on civilians on principle. It was long before our Government could be brought to see that the best defence against Hun air-raids was to carry the war into Germany by the same methods. It was argued with considerable force that, no matter what dirty tricks might be employed by the Germans, we at least ought to carry on the war as cleanly as war can be made. But in the end the logical argument that it is often kindest to be cruel prevailed, and we announced that as soon as preparations could be made a policy of reprisals should be undertaken. That policy has only been put into effect in a very small degree as yet, but it is abundantly clear that it is already achieving its object. The question, then, is, Ought we to be content with what has been done and to enter into an undertaking that if the Hun will refrain from bombing "open" towns, we will do the same? For our own part, we should answer the question in the negative, and that for several reasons. In the first place, it would be utterly impossible to trust the Germans to keep to the letter or the spirit of any agreement entered into with them. Indeed, it would be an act of criminal folly to conclude any sort of covenant with the present German Government, which we could not enforce. Clearly we could not enforce observance of a self-denying ordinance such as that which has been suggested. Secondly, the pursuance of "frightfulness" has rendered it debatable whether there are any "open" towns within raiding radius of Hun aerodromes. Take the case of London as an example. It was certainly an "open" city within the meaning of the term when war was declared, and it remained so until the threat of aerial attack became too acute for its defences to be left any longer in the state they were. London is now a "defended area," and as such is open to enemy attack. It is arguable, of course, that the defences were forced upon us, and that had it not been for attack from the air it would have remained "open." That, however, is hardly likely to weigh with the Germans, agreement

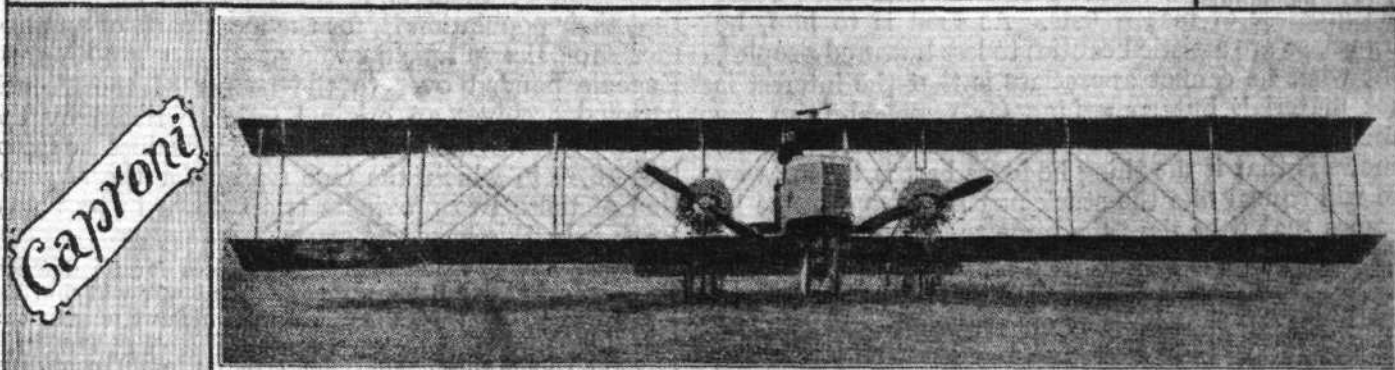
or no agreement, and we should expect—if our Government were so ill-advised as to enter into an arrangement—that one fine day, when we had been lulled into a sense of false security, we should be attacked heavily from the air as a "reprisal" for some alleged breach of the agreement by the Allies, with the justification afterwards that London could never have been within the purview of the covenant, since it was a "defended" city. Again, the Hun avowedly undertook the policy of raiding our towns principally because he expected the effect on civilian nerves to be such that there would be a howl for stopping the war at all costs. With his usual want of understanding of psychology, he was entirely wrong. No such effect has been produced, and he knows that the utmost he can do will not produce anything of the sort. On the other hand, he obviously fears the effect on his own people of intensive Allied raiding activity, and would be glad to get out almost at any price. Now, we believe that the German mentality is such that very marked effect will be produced by the persistent raiding of Hun towns. We have now got to the stage in construction when we can carry the war into Germany in both hands. The clear advantage is with us. Are we to sign away the weapon which we have looked to to win us the war? By no means. Let us make up our minds to have nothing to say to any proposals such as it is said are about to be made. It may be—will be—that we shall have to put up with the continuous raiding of our own towns and cities, with an attendant toll of life and property, but if it is necessary for us to put up with it, then so be it. We at least have the satisfaction of knowing that while we may be suffering the Hun is suffering also, and to a far greater extent. We have looked to the aerial arm to carry the war into the enemy's country and to assist us materially to victory. Now that we are ready, or nearly ready, there must be no toying with sentiment—let us get on with the task of beating the Hun with the aid of all and every instrument that comes to our hands. There must be no paltering with the task, and no signing away of any advantage we hold, whether in the name of "humanity" or anything else. We know what the German view of the humanities is, and for the purposes of this war it must be ours also.

The Raid on Venice.

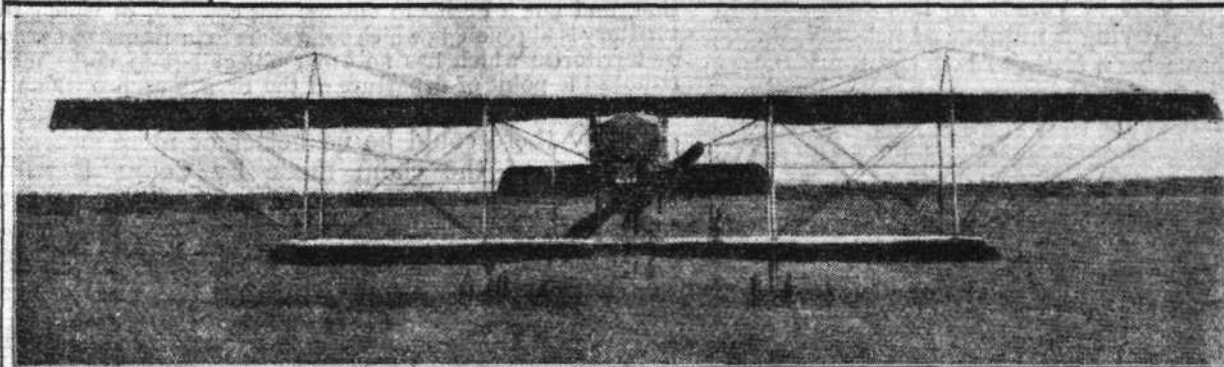
The canting excuses made by the Huns and their allies that their air-raids have always been directed against military objectives have been shown up for what they are by the raid carried out by Austrian machines against Venice last week. It is amply evident from the records to hand of the damage done to the "Queen of the Adriatic" that the deliberate intent was not to hit objects of military importance—which really have no existence in Venice now—but to effect the maximum damage on churches and other historical or beautiful buildings and monuments. We can quite appreciate the reasons for the decision to attack Venice in this way. Once again these reasons have been born of a complete misunderstanding of the psychology of the Italians. The latter are above all a people of artistic temperament, living with and loving the artistic and architectural beauties of their ancient cities, valuing them above life itself. Therefore, argues the Hun and his accomplices, the best method of demoralising the Italian is to damage and destroy those beautiful structures that have been the joy of all civilisation for generations past. Having



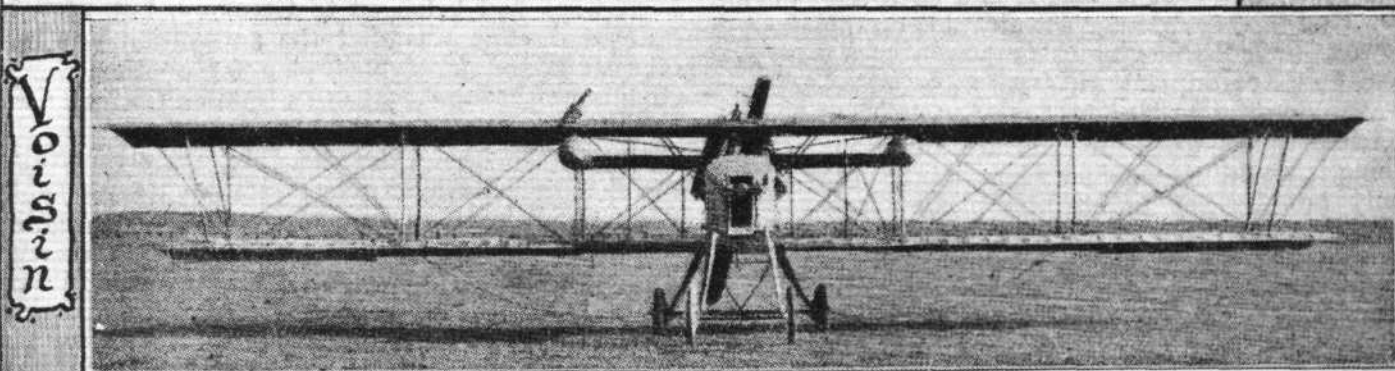
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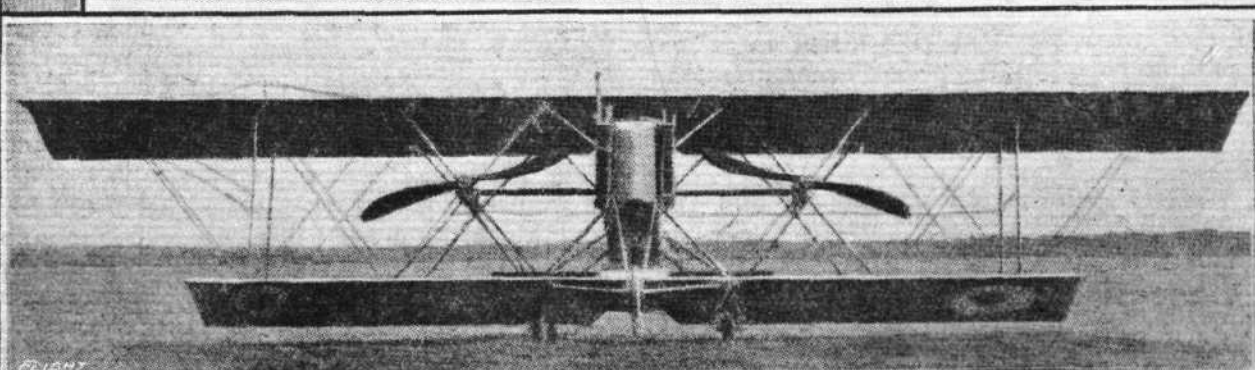
Caproni



Farman
F.90



Voisin



Moineau

Some aeroplanes of the Fifth Army of France.

"La Guerre Aérienne."

neither art nor artistic traditions of their own, it would not appeal to them that these acts of vandalism are really likely to serve one end alone—to complete the estrangement between themselves and civilisation. Incapable of any love of the beautiful, except as a marketable commodity, they simply regard the destruction of ancient cathedrals and monuments in the light of so much capital no longer in the hands of their enemies. That there is a real international property in these historic landmarks and that their destruction sends a thrill of disgust through the whole civilised world they are probably not able to appreciate. The worst thing that can be done to a Hun is to touch him in his stomach—food and feeding is possibly his greatest interest in life. He regards the matter from the most material standpoint, being the grossest of materialists. As food is to him, he argues, so are artistic beauties to less cultured peoples, but what he cannot appreciate is that the interest is not material, but something far removed from the understanding of the denizens of the sty. All he knows is that if the thing he loves best is taken away he will squeal like the stuck pug he is, and hence he argues that if he does the same to others exactly the same results will follow. In a word, he understands nothing but materialism, and of psychology he knows nothing. So that he goes on his way of destruction, hoping to arrive at one goal, but invariably reaching another. In the case of Venice he has succeeded in damaging and destroying a number of priceless works of art, which have been entirely lost to civilisation—which will never forgive the act so long as art endures—in the material belief that the Italians will call for peace before more of their cherished beauties follow the same road. But the Italian is far from being a materialist in that sense, and the only effect that is likely to be produced is to infuriate him and steel him to far greater sacrifices in the task of beating the unholy coalition.

There is another aspect of this latest atrocity which strikes us, and that is that it is a good send off for the Hun propaganda against air-raids on undefended towns. It looks very much as though the enemy had real hopes of bringing off some such agreement and was taking the, to him, best method of showing what terrible things these air-raids are and what a good thing it would be—again for him—if the Allies would only promise not to hit him back. There is one thing certain, that in the matter of the destruction of things of artistic beauty he will be able to beat us easily. There is very little of architecture in Germany which would be a loss to the world if it were flattened out completely. Still, we may be able to remove some of the eyesores of the Rhineland—or perhaps even beyond—and when the Hun sets about their rebuilding it is to be hoped his temporary occupation of more enlightened countries will have improved his taste. That, however, is probably too much to hope.

German Duplicity in 1914.

While the air is full of rumours and reports of "agreements" and treaties, and while the Pacificists here and in other countries are begging us to "trust the German people," it is quite opportune to refer to the disclosures that have recently been made by the French Foreign Minister, M. Pichon, regarding the measure of German duplicity prior to the outbreak of war. It may be remembered that Germany's actual excuse for crossing the French frontier was that French aeroplanes had dropped bombs on the

Hun side of the border. That has since been shown to be a lie, as it was bound to be in the nature of things. It has been made abundantly clear that Germany intended from the first to invade France without even a preliminary declaration of war, so that the motive which led to the making of this flimsy excuse is more than a little obscure. Especially so when we come to regard what had taken place just previously, when Germany judged war with Russia to be inevitable. But to properly understand the German aims it is necessary to go back to the period of the Franco-Prussian war, and to see what was behind the annexation of Alsace-Lorraine. Germany claims that these two provinces belong to her on racial as well as territorial grounds, and that their possession of them is justified by the alleged fact that their population is, for the most part, of an alien race to the French. Recently the ex-Empress Eugenie handed over to the keeper of the French national archives an original letter, written by the old Emperor William to her from Versailles in October, 1870, in which the true reason for the annexation of these two provinces is set down in its naked truth. In this letter he says:—

"After having made immense sacrifices for its defence, Germany wishes to be sure that the next war will find her better prepared to repel the aggression which we may be certain will be made as soon as France will have prepared her forces and found allies. That alone is the deplorable consideration, and not a desire to enlarge our country, of which the territory is big enough, which obliges me to insist on the cession of territories which has no other object but to make more remote the point of departure of the French armies which in the future will come to attack us."

Surely there could be no better or more sweeping refutation of the claim made by Count Hertling that the two provinces were annexed to consummate the desire of Germany to recover German territories of which she had been dispossessed by France. The Emperor William in his letter claims that the annexation was defensive in its character. He did not descend to the subterfuge that he was simply taking back what had belonged to Germany, but what he did not disclose was that the annexation was part of a deep and far-sighted plan for another war of conquest to be undertaken as soon as Germany was ready.

During the fateful days of July, 1914, the Kaiser posed as the apostle of peace. He was the peacefully disposed dictator of an empire compelled against its will to draw the sword in defence of its liberties. That pose he persists in even to-day, when all the world knows through evidence clear and incontrovertible that he was longing for war. It is known that before declaring war on Russia, Germany made a bid for the neutrality of France; a cynical request that France should betray her Russian ally and treat her pledged word as Germany regards her own—as not worth the "scrap of paper" to which her signature is appended. What, however, was not known until M. Pichon disclosed the fact a week ago is that the German Ambassador to Paris was instructed to make a demand which, for cynical insolence, can surely not be matched in the history of diplomatic correspondence. Not only was France to pledge herself to remain neutral, but, as an earnest of good faith, she was to hand over to Germany the frontier fortresses of Verdun and Toul to the Germans, *who would return them to France at the end of the war with Russia.* And France was to be given just eighteen hours to make up her mind! In the face of this disclosure, apart from all other evidence, it surely cannot be maintained by

the most ardent Pacificist and friend of Germany that the latter desired anything but war, nor could it be contended for a moment that she has shown anything but the basest, most insolent duplicity from beginning to end of the events leading up to the war and since. It is utterly impossible that we should accept her word for anything until we are able to enforce compliance at the point of the bayonet. Therefore, there is nothing for it but to get on with the war until, cost what it may, Germany is beaten to her knees.

♦ ♦ ♦

Labour's War Aims. The "Memorandum on War Aims" adopted by the Inter-Allied Labour and Socialist Congress seems to us to be unexceptionable in its text, but of very little more than academic interest for the moment. There is nothing in it of importance but what we can agree is passing good, but there the matter ends in the meantime because of the essential weakness that the doctrines and aims so ably enunciated will most certainly not be subscribed to by the German socialists and labourites. Even in the very improbable event of their being accepted by the German proletariat as a basis for the discussion of peace, the German ruling caste—which is what matters now—is strong enough to suppress with a firm and ruthless hand any attempt to seek peace on the lines laid down by the Memorandum. We cannot help thinking that, with all the best intentions in the world, the Conference is simply beating the air. We agree that it is well that the world should know exactly what it is we are fighting for, and to that end it is possibly something to the good that the Conference has indicated in clear terms what thinking Labour in the Allied countries conceives to be the task before us, but that is as far as the matter can be carried for the present. The plain truth of it is that the Germans, thanks to their successes in the East, are not yet in the chastened

frame of mind which leads to a moderate consideration of any proposals for a new Utopia to be erected on the ruins of Europe. Moreover, they are buoyed up by the hope that the coming Spring campaign in the West will bring them a decisive victory over the Allies which will enable them to dictate their own terms of peace—which would certainly not march with the war aims of the Inter-Allied Socialists. What we have to keep well in mind is that Germany is not beaten yet, and until she is at least faced with the absolute certainty of defeat in the field it is of no use trying to tempt the German masses with pious resolutions. They have first of all got to be taught that war for the sake of aggrandisement is a game that recoils on their own heads. When that lesson has been well rubbed in it will be time enough to talk about what sort of world we are all going to be asked to live in after the war. And, it may be remarked, when the Hun has learnt that lesson properly it does not seem to us that our war aims will require much stating.

To be quite plain about the matter, while we welcomed the statements of Mr. Lloyd George and President Wilson, in which the Allied war aims were very fully enunciated, we do not like the continual repetition of these aims with modifications and qualifications added or subtracted by persons or bodies. It was necessary for the satisfaction of the Allied peoples in the first place; for the instruction of neutral opinion in the second; and for the information of the enemy in the third, that our aims and objects should be clearly defined. But having so defined them, we are most strongly of opinion that we should get on with their achievement without further talk about them. Constant reiteration is apt to be taken as a sign of weakness. Certainly it may, in certain circumstances, be taken as an indication of doubt in our ability to consummate the task we have set ourselves. Let us cut out the talk and get on with the job.



"Mentioned in Despatches."

It was announced in a supplement to the *London Gazette* that the name of the following should be added to the list of officers recommended for distinguished and gallant services and devotion to duty in the despatch from the Field-Marshal Commanding-in-Chief, the British Armies in France dated November 7th, 1917, and published on December 11th:—

Royal Flying Corps.

Temp. Lieut. R. L. Graham (killed).

It is also announced that the description of Temp. 2nd Lieut. N. Sharples, Manchester R., should be Temp. Lieut. N. Sharples, Gen. List and R.F.C.

Five to One.

THE following is a comparison of the number of bombs dropped during January by the enemy in the area occupied by the British troops in France, and the number dropped by the R.N.A.S., R.F.C., and the Australian Flying Corps in enemy areas:—

	By Day.	By Night.	Total.
Enemy	221	1,261	1,482
R.N.A.S., R.F.C., and Australian F.C.	5,900	1,753	7,653

Air Work in the Cambrai Battle.

IN his despatch regarding the fighting round Cambrai last November, Field-Marshal Sir Douglas Haig says:—"Great credit is due also to the Royal Flying Corps for very gallant and most valuable work carried out under conditions of the greatest difficulty from low clouds and driving mist."

Dealing with the German counter-attack on November 30th, Sir Douglas Haig says:—"No steadily advancing barrage gave warning of the approach of the German assault columns, whose secret assembly was assisted by the many deep folds and hollows typical of a chalk formation, and shielded from

observation from the air by an early morning mist. Only when the attack was upon them great numbers of low-flying German aeroplanes rained machine-gun fire upon our infantry."

From Manchester to India.

THE aeroplane "Manchester," purchased by the Manchester Chamber of Commerce for presentation to the Empire of India, was formally handed over on March 2nd. In receiving the gift, Lord Desborough, President of the Imperial Air Fleet Committee, explained the work of the Committee, and said that everything that stimulated the exertions of those who supplied the necessary equipment and the gallant young men who manned the flying machines should be done.

U.S. Army Asks for More.

IN addition to the \$640,000,000 (£128,000,000) already authorised for aviation in connection with the U.S. army, the War Department has asked Congress for a further appropriation of \$450,000,000 (£90,000,000).

The U.S. Aerial Mail.

OFFICIAL announcement has been made in the U.S. that the aerial mail service between New York and Washington will begin on April 15th. A new 24-cent (1s.) stamp will be issued, and this, in addition to the regular postage, will make the charge 27 cents (1s. 1½d.). The time for the journey between New York and Washington is given as two hours.

Curtiss Aeroplanes for Brazilian Navy.

THE Brazilian Navy has now received at Rio de Janeiro eight Curtiss aeroplanes which are to form the nucleus of a naval air service. With them, it is said, have also arrived engineer-instructors from the Naval School of Aviation.

America Commandeers Spruce.

ACCORDING to a despatch from Washington, the U.S. Government, in connection with the arrangements for speeding up the production of aircraft, has commandeered the spruce supply and the mills in the North-West.

AN ALBATROS FIGHTING BIPLANE.

(Continued from page 227.)

HAVING dealt with the bulkheads or transverse partitions of the Albatros *fuselage* in our issue of last week, the longitudinal rails will be considered next. These are of a somewhat complicated nature, varying as they do along their entire length, not only as regards being tapered from front to rear, but also in the different form of spindling out employed at the various points, and in the method of reinforcing with other strips of

with a triangular section strip, so as to carry the three-ply covering into the sloping side. Similarly at the section A, Fig. 6. the *longeron*, which is here of solid rectangular section, is reinforced on the outer side with a curved trip, spindled out externally, and with a smaller strip on the lower face of the *longeron*. This is done partly to strengthen the *longeron*, which at this point is subject to an increased compressive



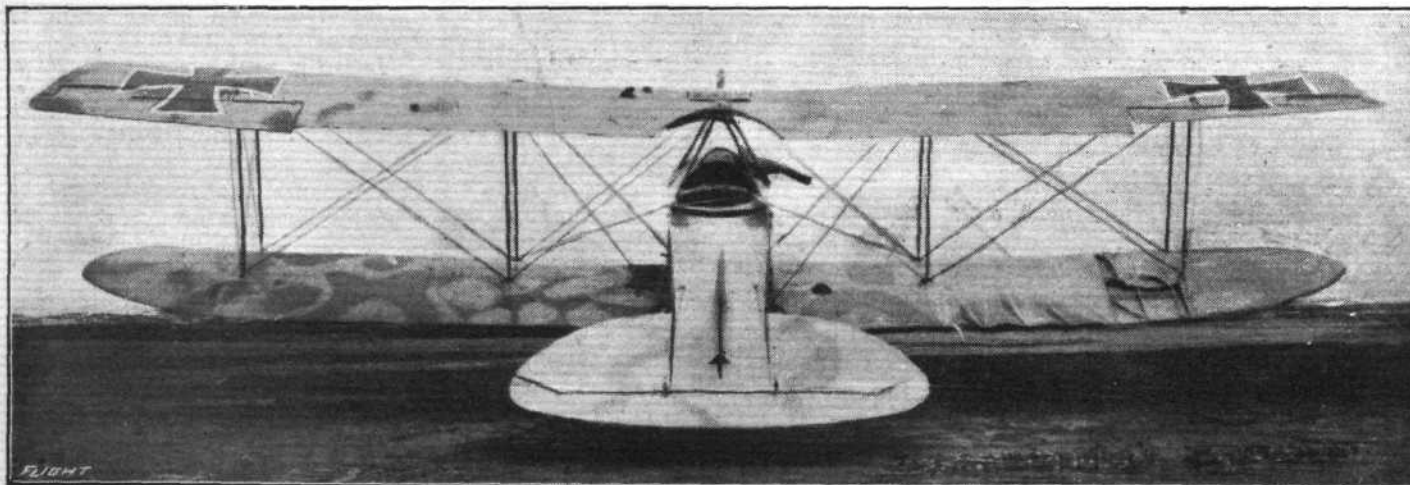
Front view of the Albatros biplane.

wood, partly in order to increase their strength where required and partly to make their overall section conform to the various angles and curvatures of the outside three-ply covering of the *fuselage*.

From Fig. 6 a fairly good idea may be formed of the shape and dimensions of the *longerons* at various points. The lower one (left hand) is originally of rectangular section, but is lightened from point to point by various forms of spindling and stop-chamfering. Thus at the point B (see key, diagram Fig. 6), the inner face of the bottom *longeron* is spindled out on its inner face with a curved cutter. At other points of this *longeron* farther towards the stern various

load, owing to the overhung engine, and also to afford attachment for the three-ply covering, which at this point changes from flat sided to rounded section where the sides gradually merge into the truncated cone of aluminium which forms the extreme nose of the body proper, *i.e.*, at the point just behind the "spinner" on the air screw boss.

The upper *longeron*, which is originally of rectangular section, is spindled out to channel and L sections at various points, as shown in X, Y, Z, Fig. 6. So as to form an attachment for the curved top of the body, the top *longerons* have glued to their upper face additional strips of triangular section while at the



Rear view of the Albatros biplane.

sections are met with, as channel, solid rectangle, and L sections of various proportions. Between the horizontal stern post and the point at which the middle *longeron* meets the lower one, the latter is reinforced

point Y, Fig. 6., the section is left rectangular so as to form a support for the gun ring. In addition to their function as strengthening members these strips serve the further purpose of preventing the

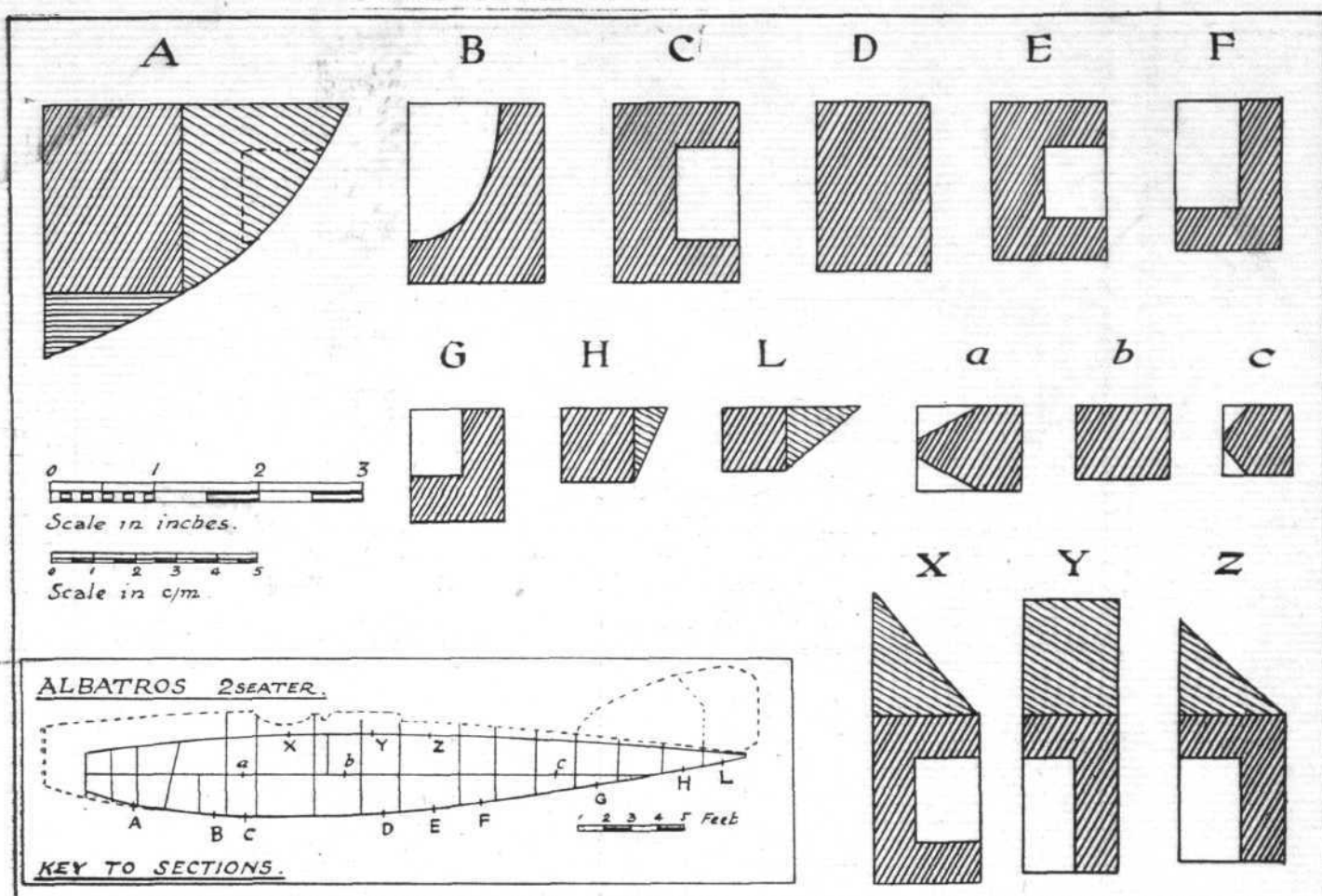


Fig. 6.—Sections and dimensions of the longerons of the Albatros biplane.

bulkheads from sliding along the longerons, as they are cut off where a bulkhead occurs, against the front and rear sides of which they abut. In some places, as for instance in the front of the body where the covering is in the form of an aluminium cowl over the engine, the strips are omitted and the cowl attached to turnbuttons as shown in the sketch Fig. 7. At such points the bulkheads are prevented from sliding along the longerons by a long wood screw passing horizontally through the longeron into the bulkhead.

The middle longerons, which, as already pointed out in a previous article, are horizontal, *i.e.*, parallel to the propeller shaft, are of smaller overall dimensions than are the four main longerons. They are rectangular section, lightened in places by stop-chamfering, as shown in *a* and *b* Fig. 6.

Fig. 8 shows, in side elevation and plan, the general arrangement of the fuselage, and should, in conjunction with the various sections and key diagrams, explain fairly clearly the general lay-out of the body. It will be noticed that in plan the sides of the body are straight from the tail post forward to the pilot's cockpit. For ease in manufacture it is an advantage that the ribs of the tail plane should be at right angles to the spars, and in order to effect this it is necessary that the sides of the body should be parallel for the length of the tail plane. Since, however, to provide for this the longerons would have to be changed from a converging direction to a parallel one which would necessitate a somewhat sharp bend in them at the point where the tail plane commences, and as, moreover, the depth of the tail plane is not the same as that of the body except at the extreme rear, a different course has been followed. From the point where the tail begins two extra longerons on each side have been built into the bulkheads of the body. These two short

longerons have, in plan, a direction parallel to the line of flight, while the main longerons continue on their converging course. This arrangement is indicated in the plan view Fig. 8. In side elevation the short longerons, against which lie the inner ribs of the tail plane, have the same curvature as the tail plane. In this manner the lines of the rear part of the body are not spoiled, while an easy flowing curve is provided for running the tail plane into the body. The arrangement will be further made clear by reference to Fig. 1, page 224.

Reference has already been made to the peculiar

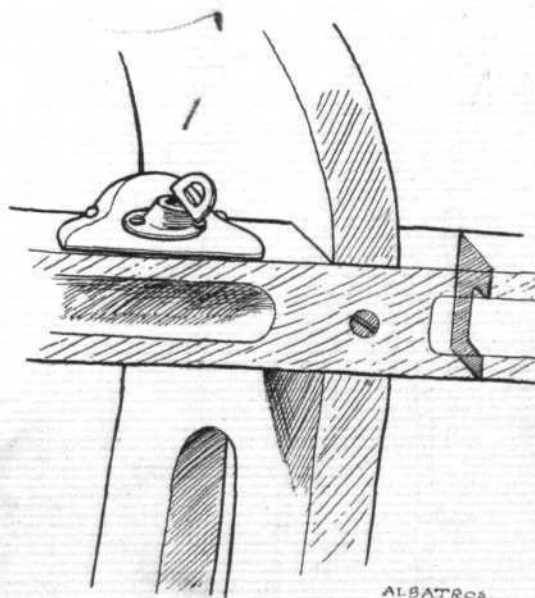


Fig. 7.—Sketch showing turnbuttons securing engine cowl to upper longerons. The bulkhead is prevented from shifting by a wood screw going through the longeron into the bulkhead.

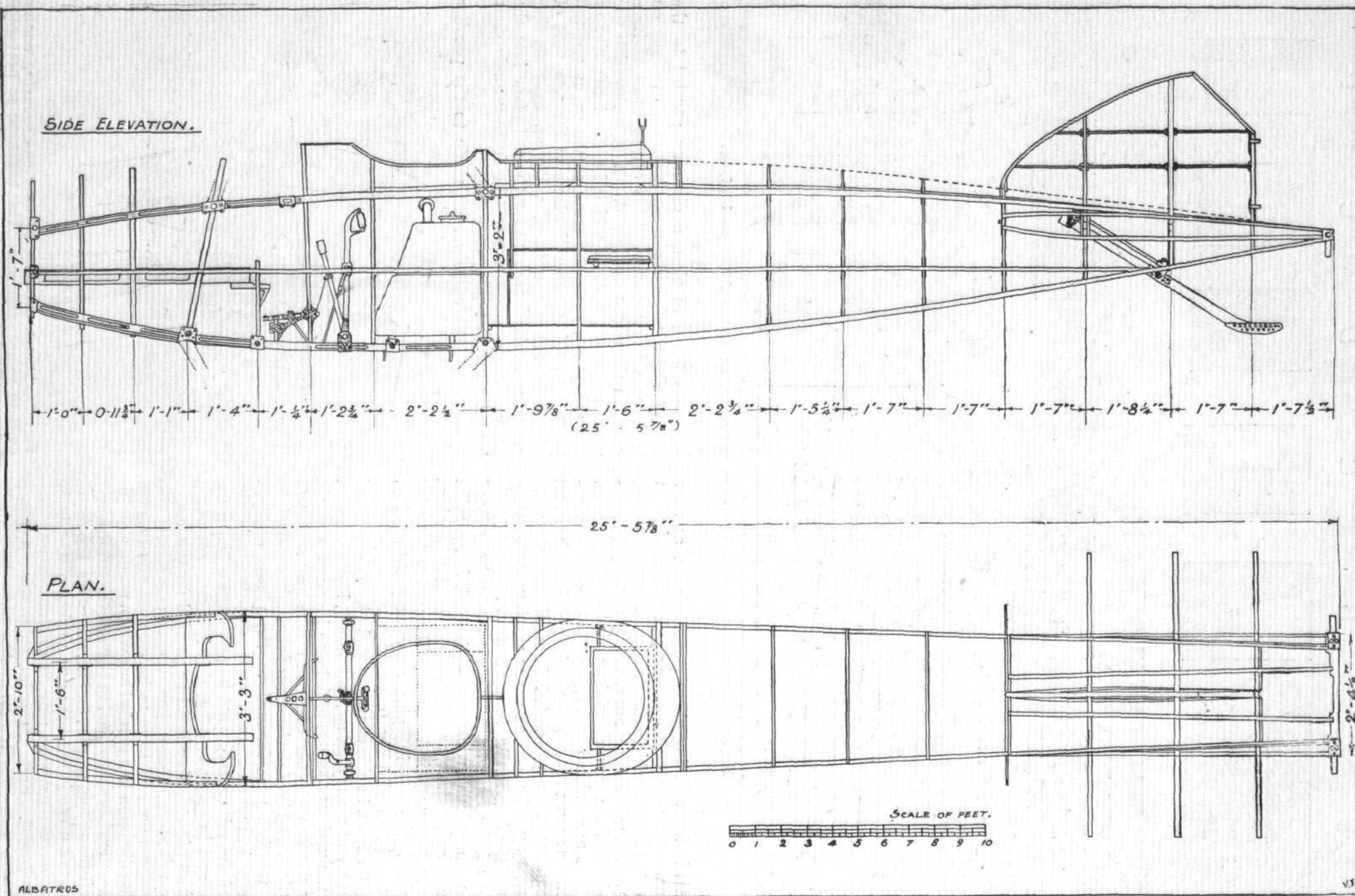


Fig. 8.—General arrangement of the Albatros body. Side elevation and plan to scale.

attachment of the tail plane to the body. The sketch at the top of Fig. 9 shows in perspective this attachment, which is also illustrated in the diagram in the bottom left-hand corner of Fig. 9. The bulkheads of the body are extended outwards to form cantilever beams which support the tail plane. There are three of these cantilever beams, while further support is provided for the tail plane leading and trailing edges as indicated in the sketches. The spars of the tail plane are of the box type, built up of ash flanges with thin three-ply sides, cut out for lightness. These spars are so proportioned that they fit over the cantilever beams, which do not, it will be seen, run right out to the edge of the tail plane, but are finished off just outside the second tail plane rib. No external bracing of the tail plane is provided, the depth of it and the method of mounting being relied on for the necessary strength.

To provide against the tail plane sliding off its cantilever supports it is secured at the leading and trailing edge. The former attachment is indicated in the bottom right-hand corner of Fig. 9. A sheet steel shoe fits over the corner of the leading edge and inner rib, and through this shoe a long bolt passes, which runs across the body to a similar shoe on the other side. In Fig. 10 is shown the rear attachment of the tail plane. A sheet steel box surrounds the corner of the fuselage. Welded to this box is a short tube which fits into a circular recess in the end of the trailing edge of the tail plane. As the elevator tube runs right across and is fitted with collars bearing against the sides of the clips that form the bearing for the elevator tube, the trailing edge of the tail plane is prevented from slipping outwards.

The manner employed of forming bearings for the elevator is indicated in the diagrams of Fig. 10.

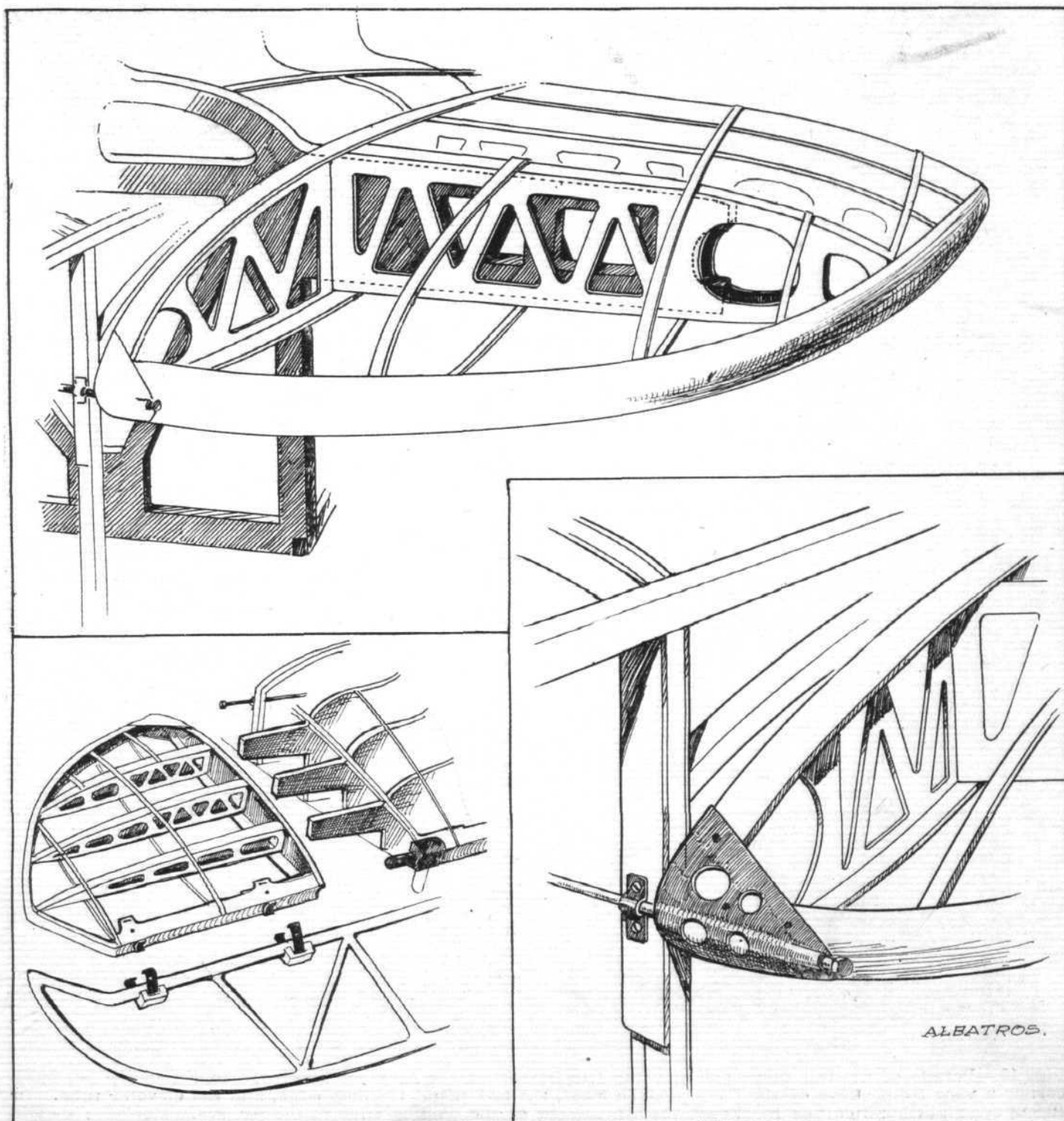


Fig. 9.—Sketches of the tail plane and its attachments on the Albatros biplane.

A steel strip is bent over the tube, and its two free ends are bent over and fit into slots in the trailing edge of the tail plane. Each clip is then secured to the tail plane by a vertical bolt as shown in the diagram. The trailing edge of the tail plane is spindled out to a semi-circular section as shown, and a curved metal distance piece is screwed to this trailing edge or spar, so as to form the second half of the bearing of which the bent steel strip forms the other half. To remove the elevator the bolts securing the clips are undone; the clips are then bent outwards until

their free ends clear the slots, when the elevator can be removed bodily.

As the elevator is built of steel tubing throughout, wood blocks of the shape shown in detail 1, Fig. 10, are employed for attaching the fabric covering. These blocks span over the steel strip bearings, and are secured to the tubular leading edge of the elevator by screws as shown in section B-B. A hole in the opposite wall of the tube serves for the insertion of the screwdriver.

Under the horizontal stern post of the body are

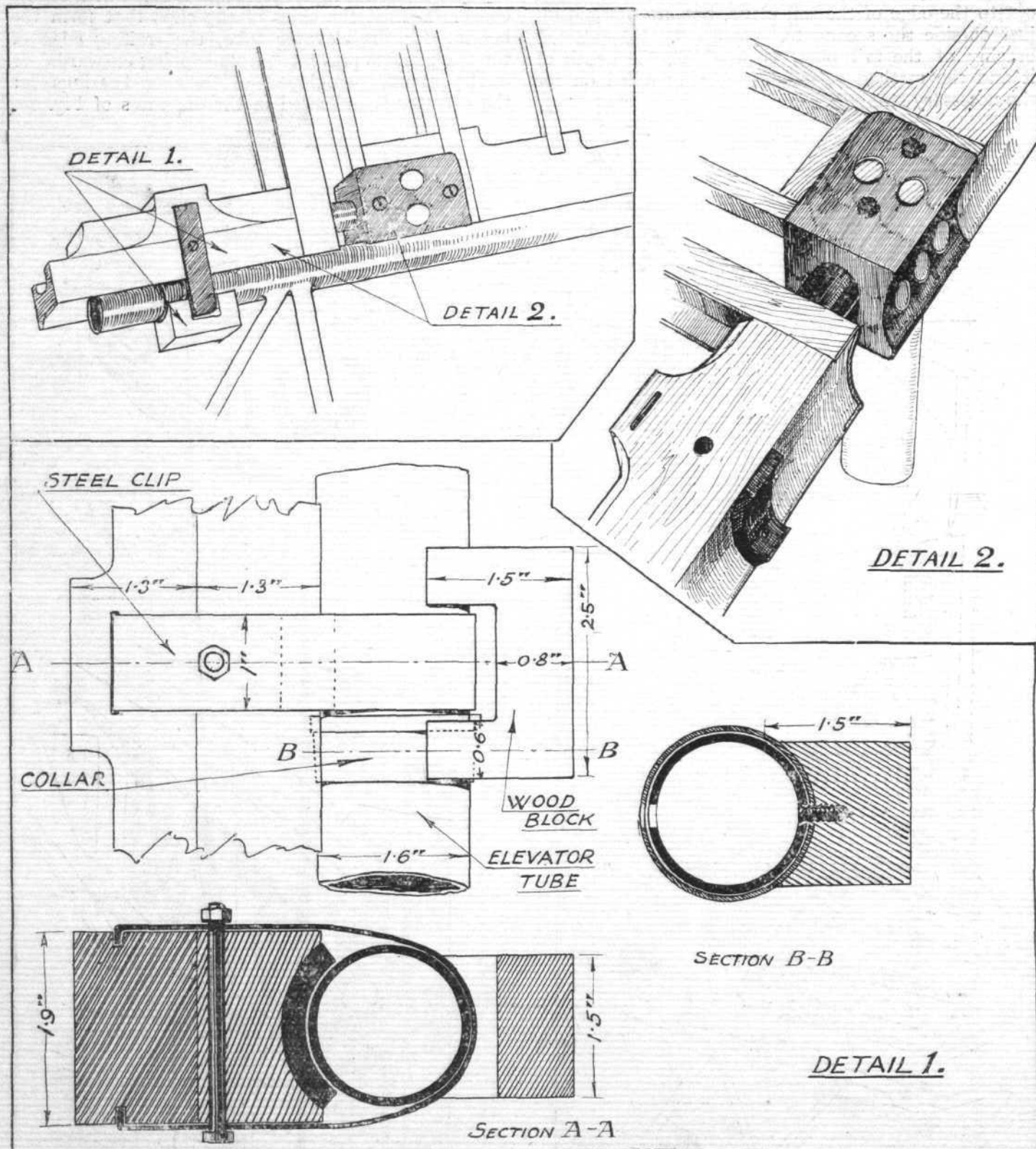


Fig. 10.—Details of the tail plane and elevator attachment on the Albatros biplane. In the upper left hand corner a view from above of the fuselage stern post, the tail plane trailing edge, and the elevator tube. In the upper right hand corner is shown the attachment of the trailing edge to the fuselage. Bottom: details of the steel clip bearings for the elevator tube; also the wood block to which the elevator fabric is attached around the hinge. The attachment of this wood block must be attended with some difficulty, as the wood screw and screw driver have to be inserted through a hole in the opposite wall of the steel tube. Probably a special tool is employed.

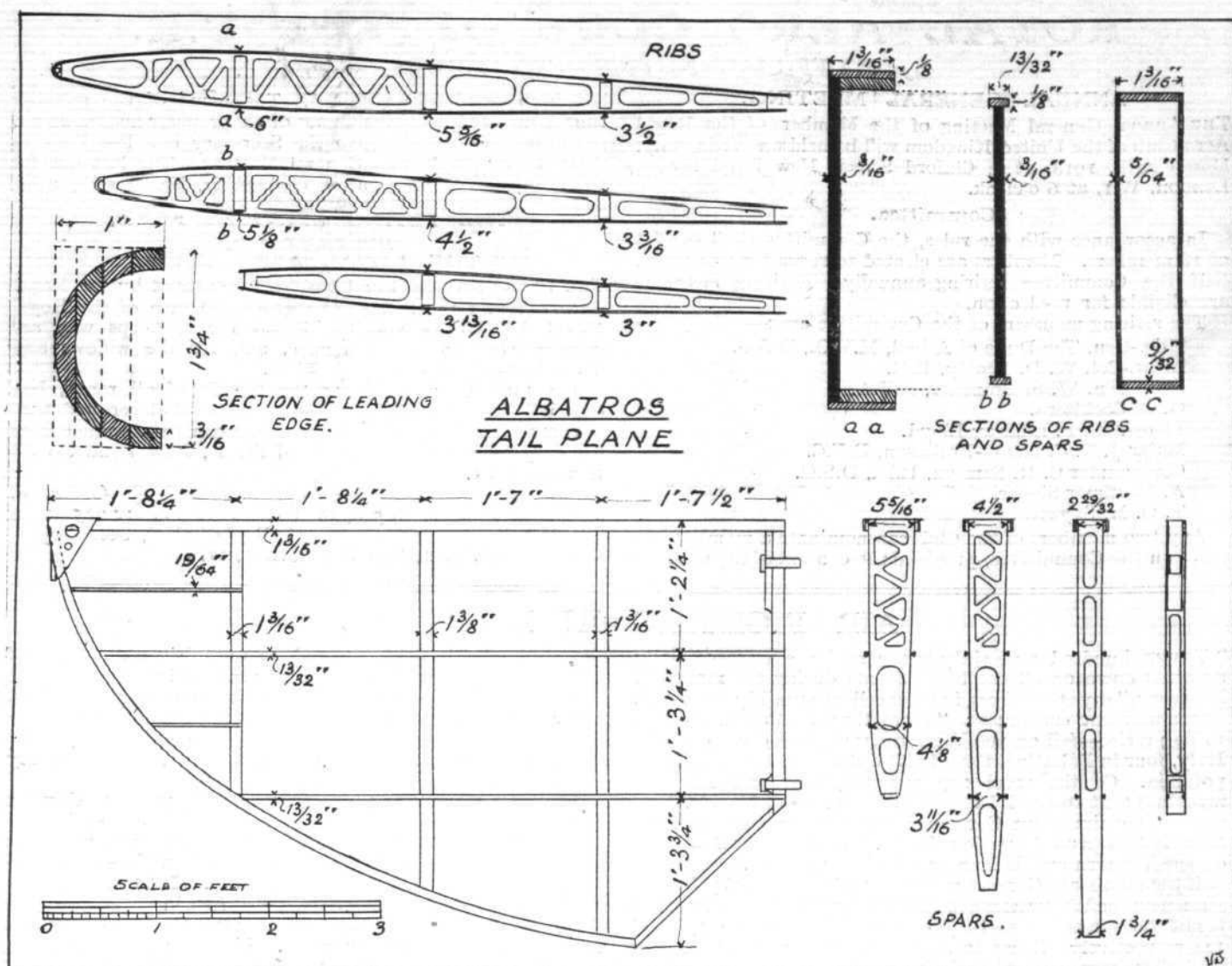


Fig. 11.—General arrangement and dimensions of the members of the tail plane on the Albatros biplane.

two short tube stumps, closed at their lower ends. The object of these is not at first apparent, since they appear too short to protect the elevator, but when it is remembered that the Germans favour transportation by road, trailing the aeroplane behind a lorry, it becomes at once evident that these stumps serve to support the stern of the body on the floor of a lorry while the machine is trailed behind on its own wheels.

As regards the remaining details of the tail of the Albatros little need be said, as they are fairly evident from the plan and sections of Fig. 11. It will suffice to point out a rather ingenious construction of the leading edge of the tail plane. In plan the tail plane, it will be seen, is roughly semi-circular, and its leading

edge therefore has to be shaped to this curvature. As an ordinary strip of solid spruce spindled out to a semi-circular section would scarcely be strong enough for this work a different method has been employed. It appears that originally the leading edge of the tail is made up of four laminations of ash, having, of course their grains running in slightly different directions. The rectangular section spar thus formed is then spindled out to a semi-circular section, as shown in the diagram, leaving the impression that the leading edge is made up of seven thin strips of wood glued together. The resulting leading edge appears to be one of great strength, while at the same time being quite light.

(To be continued.)

Volunteers and Air Raids.

AN Army Council Instruction, which is retrospective to October 4th last, notifies that if an officer or volunteer in uniform is employed, under due authority, on military duty during and in connection with an air raid, in the event of his being killed or injured as a result of such employment he or his dependants will be entitled to the non-effective benefits provided in a former instruction. The new instruction is applicable to any member of the Volunteer Force, and is not restricted to members of sections A, B and C.

French Tribute to British Flyers.

"THERE is no doubt as to the superiority of the British airmen," says the Havas agency correspondent on the British Front. "In the week during which Trèves was bombarded in broad daylight 11 British aeroplanes brought down 58 German machines.

"One of the airmen is a young captain, who accounted for four enemy machines in one day in December, for five on February 16th, and for another on February 18th. His victims now number nearly 50. The squadron of six aeroplanes which he commands has brought down over 100 machines in nine months. One of his comrades smashed up three German machines on the 16th."

Famous Frenchman Wounded.

ACCORDING to *Le Matin*, Prince Jerome Murat, who is an officer in the French aviation service, has been severely wounded and has had to have his left leg amputated.

M. Schneider's Son Killed.

Le Petit Parisien has announced the death, as the result of an air fight, of Sub-Lieut. Schneider, a son of M. Schneider, the well-known steel manufacturer and proprietor of the Creusot armament works.

ROYAL AERO CLUB OF THE U.K.

OFFICIAL NOTICES TO MEMBERS.

ANNUAL GENERAL MEETING.

THE Annual General Meeting of the Members of the Royal Aero Club of the United Kingdom will be held on Wednesday, March 27th, 1918, at 3, Clifford Street, New Bond Street, London, W.1, at 6 o'clock.

Committee.

In accordance with the rules, the Committee shall consist of 18 members. Members are elected to serve for two years, half the Committee retiring annually. Retiring members are eligible for re-election.

The retiring members of the Committee are:—

Brig.-Gen. The Duke of Atholl, M.V.O., D.S.O.
Lieut.-Col. W. D. Beatty, R.E.
Brig.-Gen. W. S. Brancker, R.F.A.
G. B. Cockburn.
Lieut.-Col. F. Lindsay Lloyd.
Major J. T. C. Moore-Brabazon, R.F.C.
Commander C. R. Samson, R.N., D.S.O.
A. Mortimer Singer.
T. O. M. Sopwith.

Any two members of the Club can nominate a member to serve on the Committee, provided the consent of the member

has been previously obtained. The name of the member thus nominated, with the names of his proposer and seconder, must be sent in writing to the Secretary not less than 14 days before the Annual General Meeting. The last day for the receipt of nominations is Wednesday, March 13th, 1918.

THE FLYING SERVICES FUND, administered by THE ROYAL AERO CLUB.

THE Flying Services Fund has been instituted by the Royal Aero Club for the benefit of officers and men of the Royal Naval Air Service and the Royal Flying Corps who are incapacitated on active service, and for the widows and dependants of those who are killed.

The fund is intended for the benefit of all ranks, but especially for petty officers, non-commissioned officers and men.

Forms of application for assistance can be obtained from the Royal Aero Club, 3, Clifford Street, New Bond Street, London, W. 1.

Total, March 5th, 1918

£ s. d.
12,625 1 8

H. E. PERRIN, Secretary.

3, Clifford Street, New Bond Street, W. 1.

AIR FIGHTING IN FEBRUARY.

"THREE hundred and sixty-one aeroplanes were officially reported down on all the battle fronts during the month of February," says the *Times*, in its excellent monthly summary. The statement continues: "More than half of these—213 to be precise—fell on the Western front, five came down in Italy, four in Palestine, three in Macedonia, and one in Mesopotamia. Of the total 273 were German and Austrian machines sent to earth by Allied airmen, and 88 were Allied machines claimed by German Main Headquarters to have been shot down on the various fronts. The total for December on the Western and Italian fronts alone was 390.

If the number of German machines accounted for by British airmen on the Western front and naval airmen in fighter patrols is not so large as it was in January—the figures are 138 and 144 respectively—it has to be stated by way of explanation that there were several entirely blank days during the past month, and several others when flying was only possible for a brief period. But on those days when visibility was good, the fighting was so intense as to recall the days preceding the Battles of Arras, Messines, Ypres, and Cambrai last year. And as on those days, the successes of British airmen were most marked. Four days in February stand out prominently in this respect—the 16th, 17th, 18th, and 19th. On those four days, British airmen brought down (that is, destroyed) 49 German aeroplanes and drove down 14 out of control (with more than a probability that some of them, at least, crashed), with a loss to themselves of only 12 machines missing.

"Of the 138 German machines accounted for by the British, 92 were destroyed (87 on the battle front and five by the R.N.A.S.), three were brought down by gunners and infan-

try, six landed in our lines, and 37 were driven down out of control (two by naval airmen). The British losses as reported by General Headquarters in France were 39 machines missing.

"Seventy-four Germans stand to the credit of French airmen and gunners on the Western front—39 destroyed or captured and 35 driven down seriously damaged in the enemy lines.

"The Belgian Flying Service, which brought one German machine down in flames during the month, has suffered a serious loss in the death or capture—it has not yet been definitely ascertained which fate has overtaken him—of Second Lieutenant Thieffry, its leading member. He had the distinction of scoring a "double event"—the first in the Service—on July 9th, 1917, when he brought down two German aeroplanes in the same number of minutes. Lieutenant Thieffry, who was first mentioned officially on July 3rd, had by August 28th won nine aerial victories over the enemy.

"Italian airmen and members of the R.F.C. in Italy continued in February their successful offensive against German and Austrian flying men. Forty-five enemy machines were destroyed by them—23 by Italians, 22 by the British—and in addition French airmen crashed two, Italian gunners shot down three, and the British drove one down out of control, a total of 51. The superiority which British airmen in Italy have gained over the enemy is established by the fact that in one week during the month they destroyed 15 and drove down one German machines with a loss to themselves of only one aeroplane, and that from January 26th to February 21st they accounted for 58 enemy aeroplanes and lost themselves only eight machines."

THREE MONTHS' WORK OF THE FRENCH FLYERS.

In a statement issued on February 28th the French expert commentator says:—

"In spite of bad atmospheric conditions and comparative quiet on the front, the French aviation service has shown the greatest activity. Between December 1st, 1917, and February 15th, 1918, French aeroplanes carried out more than 22,518 flights. The fighting aeroplanes for a certainty brought down 104 aeroplanes, while 93 machines were put out of control and may be regarded as lost to the enemy. Engagements in certain sectors developed into regular pitched battles, which demonstrated our superiority. During the same period only 38 French machines were lost. In addition, the enemy left in our lines some machines which were either forced to descend or had lost their way, the majority of them of the most recent make, thus revealing the progress of German industry. Lastly, notwithstanding considerable efforts by the Germans to improve their aviation service, backed by a formidable campaign of propaganda and intimidation, the figures given show that our aviators have secured undoubted superiority.

"The scouting air service pushed its reconnoitring far behind the enemy lines. Over 1,339 photographic expeditions were

carried out, and yielded 21,328 photographs. The artillery air service sought out objectives for our guns. Our bombing aeroplanes dropped ninety-two tons of explosives on the enemy aerodromes, food and sorting stations, artillery parks, bivouacs and agglomerations of workshops with remarkable success, especially in the case of chemical works at Ludwigshaven, the Briey and Sarre coal basins, the depôts and railway stations of Metz-Stablon, Thionville, Trèves, Saarbruck, and Friburg.

"During the corresponding period of last year only thirty-nine tons of explosives were dropped. Observation balloons, though subjected to frequent attacks, made ascents totalling 3,593 hours, observing the rear of the enemy's lines, his lines of communication, and the positions of his batteries.

"On the Western front, in the French zone as in the British sector, the situation remains stationary, the official *communiqué* only referring to local raids and reconnaissances and to sporadic cannonading. According to the view taken in British military circles a German offensive is believed to be imminent, but up to the present there is no certain indication confirming the prognostication. The near future will inform us with certainty on the point."

THE ROLL OF HONOUR.

Reported by the Admiralty:—

Killed.

Acting Flight Commander M. J. G. Day, D.S.C., R.N.
Flight Lieut. G. Moore, R.N.
Observer Lieut. C. O. Palmer, R.N.

Accidentally Killed.

Flight Lieut. C. H. N. Chapman, R.N.
Flight Lieut. H. C. Lemon, R.N.
Prob. Flight Officer E. P. McIndoe, R.N.
Flight Sub-Lieut. H. McK. Reid, R.N.

Missing (feared Drowned).

Flight Sub-Lieut. C. G. Duckworth, R.N.

Seriously Injured.

Prob. Flight Officer J. W. McVean, R.N.

Slightly Injured.

Prob. Flight Officer R. H. Adcock, R.N.
Prob. Flight Officer F. I. Bradley, R.N.
Prob. Flight Officer C. B. Crowther, R.N.
Prob. Flight Officer K. N. Knapp, R.N.
Flight Lieut. E. E. Maitland-Heriot, D.S.C., R.N.

Accidentally Injured.

Prob. Flight Officer W. G. Crosby, R.N.
Prob. Flight Officer G. C. Crowley, R.N.
Prob. Flight Officer, H. J. Dyer, R.N.
Flight Sub-Lieut. J. H. Hardman, R.N.
Acting Flight Commander P. D. Robertson, R.N.

Missing.

Flight Sub-Lieut. V. J. Budd, R.N.

Missing (believed Prisoners).

Flight Commander T. R. Hackman, R.N.
Observer Lieut. T. H. Piper, R.N.

Reported by the War Office:—

Killed.

Lieut. S. Armstrong, R.F.A., attd. R.F.C.
2nd Lieut. W. J. Beer, R.F.C.
2nd Lieut. J. E. Blackeby, R.F.C.
Capt. S. Broadbent, R.F.C.
2nd Lieut. R. C. Brown, R.F.C.
Lieut. G. W. Croft, Linc. R., attd. R.F.C.
Capt. K. L. Gopsill, R.F.C. (Lieut. E. Surrey).
2nd Lieut. D. S. Gordon, R.F.A., attd. R.F.C.
Capt. J. S. Gregory, A.S.C., attd. R.F.C.
Lieut. A. J. Homersham, Lond. R., attd. R.F.C.
Lieut. A. C. Morris, R.W. Fus., attd. R.F.C.
2nd Lieut. M. A. Rowat, R.F.C.
Lieut. J. H. Stream, Linc., attd. R.F.C.
Lieut. H. Streeter, Aus. F.C.
Lieut. F. J. Tarrant, Aus. F.C.
2nd Lieut. H. T. Thorp, R.F.C.
2nd Lieut. H. H. Wilson, R.F.C.
4357 Sergt. T. Kavanagh, R.F.C.

Previously Missing, now reported Killed.

2nd Lieut. A. A. Allen, R.F.C.
Lieut. B. H. Bean, R. Welsh F., attd. R.F.C.
2nd Lieut. M. G. Gunn, R.F.C.
2nd Lieut. C. G. O. MacAndrew, Yeo., attd. R.F.C.
2nd Lieut. P. L. McGavin, R.F.C.

Accidentally Killed.

Lieut. W. J. Brown, Yeo., attd. R.F.C.
Lieut. F. R. Cook, R.F.C.
2nd Lieut. L. S. Last, R.F.A., attd. R.F.C.
Lieut. V. W. Nutkins, R. Sco. Fus., attd. R.F.C.
2nd Lieut. D. C. S. Thomas, Welsh, attd. R.F.C.

Previously Wounded, now reported Died of Wounds.

Lieut. J. P. B. Harold, R.F.A., attd. R.F.C.

Died of Wounds.

Lieut. A. Fudge, Suff. R., attd. R.F.C.

Died.

2nd Lieut. R. J. T. Forsyth, Aus. F.C.
2nd Lieut. A. G. Willcox, R.F.C.
7387 Cpl. E. Hall, R.F.C.
23633 2nd Air-Mech. R.S. Warner, R.F.C.

Previously Missing, believed Drowned, now reported Drowned.

67796 3rd Air-Mech. B. Bird, R.F.C.

Wounded.

Lieut. J. M. Carroll, Durham L.I., attd. R.F.C.
2nd Lieut. W. C. Gibbard, R.F.C.
2nd Lieut. W. C. S. Gregson, North'd Fus., attd. R.F.C.
2nd Lieut. G. W. Hockey, R.F.C.
2nd Lieut. D. F. Hurr, Middx. R., attd. R.F.C.
2nd Lieut. D. S. Judson, Lond. R., attd. R.F.C.
2nd Lieut. R. Lang, R.F.C.
2nd Lieut. A. Leggatt, R.F.C.
2nd Lieut. G. H. Lilley, R.F.C.
2nd Lieut. R. Locke, Lond. R., attd. R.F.C.
2nd Lieut. R. Longman, R.F.C.
Capt. T. R. G. Marshall, R.F.C. (Lieut. A.S.C.).
2nd Lieut. W. H. Martin, R.F.C.
Lieut. T. Nicholson, Durh. L.I., attd. R.F.C.
Capt. J. S. Ralston, M.C., Sco. Rif., attd. R.F.C.
2nd Lieut. N. C. Royston, R.F.C.
Lieut. S. L. H. Potter, R.F.C.
2nd Lieut. R. H. Williams, R.F.C.
Lieut. B. N. Wills, R.F.C.
107453 2nd Air-Mech. J. H. Jones, R.F.C.
178 C. Keritz, Aus. F.C.
44985 2nd Air-Mech. D. W. G. Lee, R.F.C.
11299 1st Air-Mech. W. T. Merchant, R.F.C.
17842 2nd Air-Mech. T. M. Preece, R.F.C.

Previously Prisoner, now reported Wounded and Prisoner in Austrian hands.

Lieut. L. B. May, R.F.C.

Previously Prisoners, now reported Wounded and Prisoners in German hands.

2nd Lieut. F. B. Farquharson, R.F.C.
2nd Lieut. E. P. Fulton, R.F.C.

Previously reported Wounded, now reported not Wounded.

8238 1st Air-Mech. J. M. McGrath, R.F.C.

Missing.

2nd Lieut. G. B. Craig, R.F.C.
2nd Lieut. F. C. Gilbert, R.F.C.
2nd Lieut. A. W. Greene, R.F.C.
2nd Lieut. H. A. Hewitt, R.F.C.
Lieut. G. G. Jackson, R.F.C.
2nd Lieut. W. M. Kent, R.F.C.
2nd Lieut. R. MacDonald, R.F.C.
2nd Lieut. C. J. W. McKeown, R.F.C.
2nd Lieut. D. G. Money, R.F.C.
Lieut. A. W. Money, M.C. R.F.C.
2nd Lieut. S. R. Pinder, R.F.C.
Lieut. D. N. Ross, Brit. Col., attd. R.F.C.
Lieut. W. Ross, R. Welsh Fus., attd. R.F.C.
Capt. F. S. Thomas, R.F.C.
2nd Lieut. E. Westmoreland, R.F.C.
406495 2nd Air-Mech. A. Mann, R.F.C.
328 Sergt. H. O. Smith, R.F.C.

Previously Missing, now reported Prisoners in German hands.

2nd Lieut. F. B. Wilmott, Aus. F.C.
2nd Lieut. A. F. Wynne, K.O.Y.L.I., attd. R.F.C.

Previously Missing, now reported not Missing.

5701 1st Air-Mech. J. Partridge, R.F.C.

Correction: Previously Missing, now reported Killed.

2nd Lieut. E. J. Halliwell, R.F.A., attd. R.F.C., should read
Lieut. E. J. Halliwell, R.F.A., attd. R.F.C.

Correction:

Missing.

Flight Commander W. Price, R.N., and not as previously reported Prince.



Fatal Accidents.

A VERDICT of "Accidental Death" was returned at a Hertfordshire inquest on February 25th on Cadet J. F. Stillman, of the American Aviation Service, attached to the R.F.C. He died on February 23rd from injuries received on February 8th. When he and Lieut. Quirkelles, of Canada, were practising attacking manœuvres their machines collided, and, becoming locked, descended in flames.

An officer of the R.F.C. was killed at Sunningdale, Ascot, on February 28th. His intention was apparently to land on fairly open ground adjoining a main road, but in coming down the aeroplane caught in a tree and fell with a crash.

An R.N.A.S. officer was killed on February 28th in a seaplane accident. The machine descended in flames in a field, and the observer was badly burned.

AIRISMS FROM THE FOUR WINDS

WHAT'S the matter with having an Army aviation representative on the Army Council? To a mere layman, it looks as if the interests and requirements of the Service might be best served by continuing the principle inaugurated some little time back,

At a moment when the Germans are putting out feelers, as a consequence of the people's growing unrest following air-raids, for an agreement to confine air bombing to the actual war-zone, it is in keeping with their "Kultur" that they should be pounding away more than ever in their attempts to smash up and destroy the historical and glorious buildings and treasures of Venice. By the wildest stretch of the imagination even the Hun cannot lay claim to the city being "fortified."

WITH what thoroughness the Hun carries out his piratical marauding campaigns can be judged by information which has been given by prisoners released from the "Igotz Mendi," the German raider "Wolf's" prize, which was wrecked on the Danish coast. They state that the "Wolf" on her cruise was accompanied by a seaplane which searched for prey to attack.

"NOTHING but the Truth" at the Savoy last Monday helped along the fund to supply comforts for the W.A.A.C. of the Southern Training Brigade R.F.C., by the entire proceeds resulting from a matinée on that day, being allocated by Mr. Gilbert Miller to the fund.

ALTHOUGH a British aeroplane is not "staged" in Trafalgar Square this week in connection with "Business Man's" War Bond Week in London, the next best thing is in evidence, in its second best cousin, the gondola of a British airship, plus a S.I.A. from Italy. From the former has been issued to each purchaser of bonds or certificates a gondola souvenir leaflet stamped "British Airship Souvenir, Trafalgar Square, March 4th to 9th."

At the Leicester Galleries some striking pictures of aeroplane work are included in a collection of war pictures by

Mr. C. R. W. Nevinson, official artist on the Western front Lord Beaverbrook, Minister of Propaganda, formally opened this interesting little exhibition at the end of last week, and besides the curiously "censored" picture, "Over the Lines," depicting a plane scouting in the midst of bursting shells, with a far-away pilot's-eye-view of the country beneath, is well worth a study. Another live picture is "Swooping down on a Hostile Plane." Both these paintings are included in the eight which have been selected for purchase by the trustees of the Imperial War Museum.

SIR CHARLES WAKEFIELD, through the British and American Centenary and Sulgrave Committee, is distributing President Wilson's address to the American Army at the Front. Sir Charles has already distributed, through the same medium, 25,000 copies to the elementary and secondary schools in Great Britain.

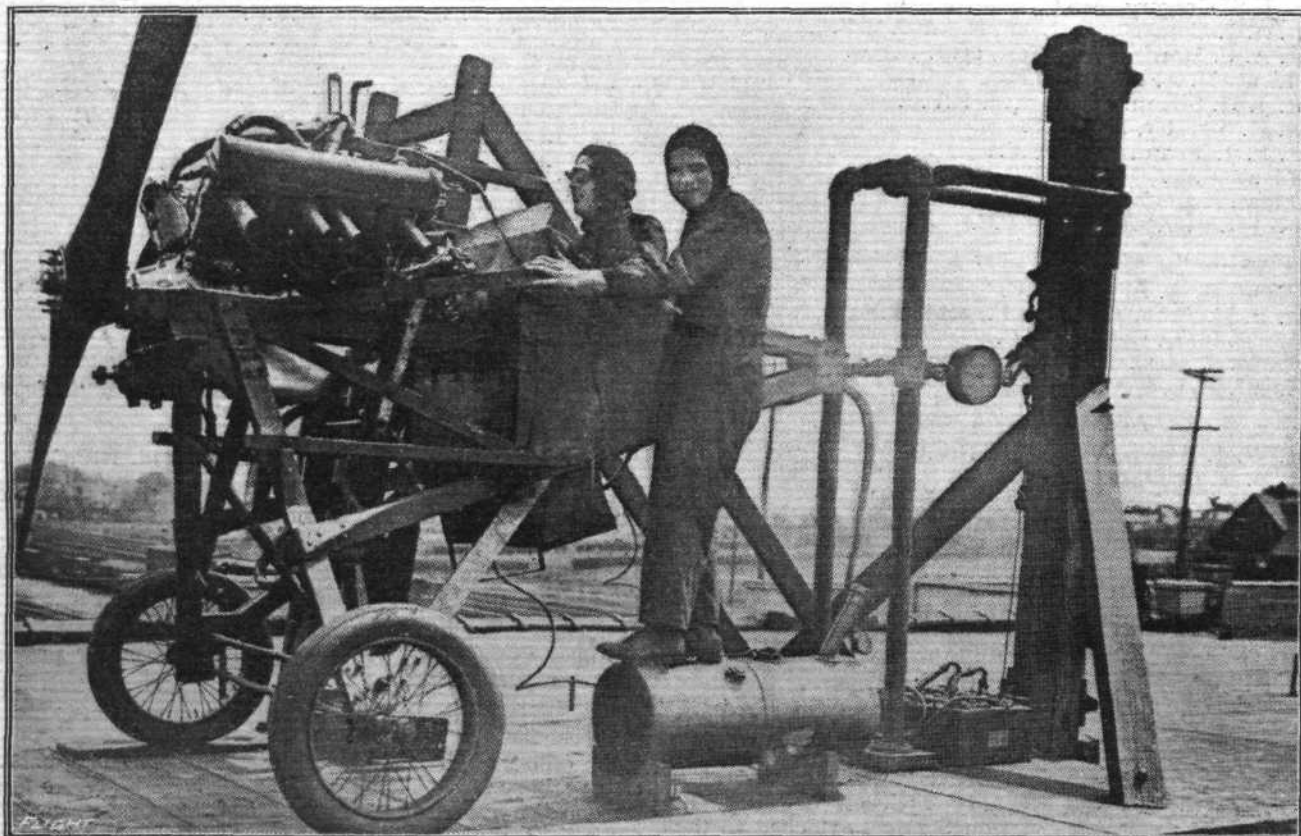
PRESUMABLY this is Sir Charles' idea of pouring oil upon troubled waters.

Apropos our article on "The Curative Value of Colour" in February 14th issue, Mr. H. Kemp Prosser writes as follows from 2, Channel View, Bexhill-on-Sea:—

"For some time past I have been thinking out a scheme of colour which would be beneficial to men whose nerves have become unstrung by flying, and I should be pleased to supervise a ward in a hospital without any fee should it be desired by any who wish it. Should you care to make this known in your paper you are quite at liberty to do so."

If there's anything in this theory, here is a good opportunity to give it a real, practical trial.

THE *raison d'être* of those "green balls" which the Huns so persistently send up into the night skies when our aviators are skimming above, as so graphically described by "Paul" in the *Daily Mail* on Monday, can hardly be found in the Germans' love of fireworks. If their constitution has not been otherwise dissected, is it possible that they may be charged



A handy chassis employed for testing an American-built Hispano-Suiza aero engine at the Wright-Martin factory.

with some new form of poison vapour which they let loose during the whole of their burning period, on the chance of our pilots entering the resulting atmospheric zone of danger and being overcome, with the almost inevitable crash to follow.

A CONTEMPORARY last week expressed surprise that no mention had been made in the newspapers to the effect that the last air raid upon this country was the hundredth. Continuing, the information is given that in Germany "the occasion was marked by the conferring of promotions and decorations upon officers of the German Air Service, while the Crown Prince sent the inevitable message thanking them for their "great work, crowned with success," against "the principal enemy of Germany." This probably explains the succession of recent raids—the raiders were out to score their century.

A VERY practical method, and one long since advocated in these pages, of enabling experience to be gained, and moreover of considerable utility at the same time, is the inauguration of a daily 'plane mail-service of eight machines from New York to Washington in April. It is to have a run for a year as part of the U.S. army's aviation training system. Good results for peace-time use should accrue.

CLIMBING of aeroplanes has gone up to pretty steep altitudes during the war, and flax has, on the planes, soared pretty high in consequence. As if in sympathy therewith, or by way of jealousy, flax last week got pushed up at Dundee to the ceiling price of £236 per ton! Moreover the consignment of which this little parcel was a part had been damaged by water. Phew! seems about time that Order in Council was issued prohibiting the export of this 'plane material. We had thought of saving up to add a new white shirt or two to our wardrobe, but it's hardly worth it, if the war's only going to last another three years.

OUR French friends are becoming increasingly enthusiastic, and with reason, regarding the work of our Air Force. The other day the *Petit Journal*, writing about the superiority of the British in the art of making raids, says this superiority is not attributable only to the excellent fighting qualities of

the troops and the good condition of the trenches; it is very largely due to the splendid services rendered by the flying men. There is no doubt whatever that the German Air Service is quite inferior to the British Flying Corps.

Again, the *Petit Parisien*, dealing with the work of the British pilots, makes special mention of two captains, one of whom shot down three enemy machines in one morning over Caudry and Bois Vauxcelles and Hargicourt. The other, after flying for an hour, was attacked by four German scouts. He brought down one, and then, after pretending to escape, suddenly executed a sharp *volte face* and attacked a second machine, which was forced down. At that moment a machine-gun bullet struck the British captain's motor, and he was forced to descend. A big German machine tried to bar his way, but a discharge of 150 machine gun bullets quickly forced the monster to make a compulsory descent to earth, and the victorious aviator landed without further incident. The correspondent says such feats are being performed daily on the British front. They greatly disconcert the enemy, who cannot prevent his defensive systems being photographed and his dispositions laid bare. It is indeed more than probable that the German offensive is being delayed owing to this constant harassing and exposure of his movements.

And this is but an instance of hundreds.

REAR-ADMIRAL MARK KERR, when presiding on Monday at Dr. Hazeltine's lecture on "The Recent and Future Growth of Aerial Law," told a typical story of that air-chivalry which has been so marked between the combatants, in striking contrast to some of the abominations of "frightfulness" which have so badly characterised the Huns' methods in this ghastly world-war.

A short time ago, Admiral Mark Kerr said, one of our fighting machines fought an enemy machine. The airman finished all his drums of ammunition, he then fired all his signal lights, and lastly, the only weapon he had was his pistol, which he hurled at the enemy plane. He managed to reach our lines, but one of the enemy followed him and hurled the pistol back, with the message: "As reprisals are the order of the day, I return the pistol the same way as I received it." "Truly," said Admiral Kerr, "a sporting Hun."



The outskirts of Buffalo, from above.

(The Curtiss Flyleaf.)

INTERNATIONAL AIRCRAFT STANDARDS.

(Continued from page 230.)

3S20—Specifications for Cold-Rolled or Drawn Carbon Steel Bars.

GENERAL—1. The general specifications, 1G1, shall form, according to their applicability, a part of these specifications.

USE—2. These bars are suitable only for low-stressed parts.

MATERIAL—3. The material for these bars shall be chosen from the I.A.S.B. standard carbon steels listed below. The composition shall be stated by the manufacturer or contractor, and is further limited as follows: Carbon, not over 0.25 per cent.

MANUFACTURE—4. The steel shall be manufactured, or at least finished, by the open-hearth, electric-furnace, or crucible process.

WORKMANSHIP AND FINISH—5. (a) The bars are to be bright and clean, sound, straight, free from pipes, laps, cracks, twists, seams, and damaged ends, and are to have a workmanlike finish. They are to be uniform in quality, within the stipulated margins of manufacture capable of being turned and threaded readily, and of taking a good finish.

(b) Any bar may be rejected because of injurious defects or faults in manufacture at any time, notwithstanding that it has previously passed inspection; it shall be returned to the manufacturer at the latter's expense. This clause shall not be taken to apply to materials fabricated after export.

PHYSICAL PROPERTIES AND TESTS—6. The bars shall have the following physical properties:

Tensile Test.—(a)

	Bars not over 0.75 in. (19.08 mm.) diameter or width across the flats.	Bars over 0.75 in. (19.08 mm.) and not over 1.50 in. (38.10 mm.) diameter or width across the flats.	Bars over 1.50 in. (38.10 mm.) diameter or width across the flats.
Minimum tensile strength	70,000 lbs./in. ²	70,000 lbs./in. ²	65,000 lbs./in. ²
Minimum yield point	50,000 lbs./in. ²	50,000 lbs./in. ²	50,000 lbs./in. ²
Minimum elongation in 2 ins. or proportion gauge length	20 per cent.	17 per cent.	15 per cent.
Minimum reduction of area	40 per cent.	38 per cent.	35 per cent.
Minimum tensile strength	49.2 kg./mm. ²	49.2 kg./mm. ²	45.6 kg./mm. ²
Minimum yield point	35.1 kg./mm. ²	35.1 kg./mm. ²	35.1 kg./mm. ²
Minimum elongation in 2 ins. or proportion gauge length	20 per cent.	17 per cent.	15 per cent.
Minimum reduction of area	40 per cent.	38 per cent.	35 per cent.

Bend Test.—(b) Bend-test pieces from bars of 0.75 in. (19.05 mm.) or less diameter (or width across the flats) shall be tested in full size as rolled or drawn. Above 0.75 in. (19.05 mm.) diameter (or width across the flats) the test pieces may be turned down from the bar to a diameter of 0.756 in. (19.08 mm.) The test pieces shall withstand bending cold through an angle of 180 deg. over a radius equal to their diameter (or width across flats) without fracture.

SELECTION OF TEST SPECIMENS.—7. (a) The bars shall be grouped by heats or melts into lots conforming to the size limits given in paragraph 6. The inspector shall select at random 1 per cent., but not less than three bars of each lot to be representatives of the sizes in the lot. One tensile and one bend test specimen shall be cut from each bar.

(b) For sizes over 1.50 in. (3.86 cm.) in diameter or width across the flats, one tensile and one bend specimen shall be taken from a bar of each size represented in the lot.

(c) The bars and specimens shall be stamped for identification. Whenever bars cannot be grouped by heats or melts, one tensile and one bend test specimen shall be taken from each lot of 100 bars or less. The provisions as to grouping by size limits and provisions for bars of over 1.50 in. 3.86 diameter, as given above, shall apply.

(d) The specimens shall not be annealed or otherwise treated before they are tested. They are to be tested in full section, unless the bars are to be subsequently reduced in section by machining. In this event, the tensile specimens may be machined to standard sizes in accordance with specification 1G1.

DIMENSIONS AND TOLERANCES.—8. The dimensions and tolerances shall be those given in the specification 3S11.

DELIVERY, PACKING, AND SHIPPING.—9. (a) All bars shall be suitably greased for protection against corrosion.

(b) The bars shall in general be grouped in bundles weighing not more than 220 lbs. (100 kg.), unless otherwise agreed between manufacturer and purchaser; the heat number and the I.A.S.B. steel serial number shall be plainly marked on a metal tag attached to each bundle. If bars are not so

grouped and bundled, each bar shall be plainly marked with the heat and the I.A.S.B. steel serial number.

COMPOSITIONS OF STANDARD STEELS.

Number.	Carbon.	Manganese.	Phosphorus, maximum.	Sulphur, maximum.
1010	0.05-0.15	0.30-0.60	0.045	0.50
1015	0.10-0.20	0.30-0.60	0.045	0.50
1020	0.15-0.25	0.30-0.60	0.045	0.50

When electric or crucible furnace steel is specified in the order, the maximum allowable percentage of phosphorus and sulphur may, at the option of the purchaser, be limited to 0.03 per cent.

3N7—Specifications for Seamless Brass Tubes.

GENERAL—1. The general specifications, 1G1, shall form, according to their applicability, a part of these specifications.

USE—2. This tubing is resistant to the corrosive action of salt water, salt air and gases.

MATERIAL—3. (a) The brass shall have the following composition:

	Per cent.
Copper	79.00 to 82.00
Lead, maximum	0.20
Iron, maximum	0.10
Zinc	Remainder

(b) Samples for analysis may consist of turnings taken from the end of the tube or of drillings. Points from which drillings are taken must be distributed around the surface of the tube so as to yield a representative sample of the tube wall.

MANUFACTURE—4. (a) The brass shall be made from lake or electrolytic copper conforming to the I.A.S.B. specification 2N2 and from B or C grade spelter conforming to I.A.S.B. specification 2N3.

(b) No scrap shall be used other than that produced in the manufacturer's own plants and of the same composition as the material specified.

(c) Tubing shall be semi-annealed unless otherwise specified.

(d) Any sheet may be rejected because of injurious defects or faults in manufacture at any time, notwithstanding that it has previously passed inspection; it shall be returned to the manufacturer at the latter's expense. This clause shall not be taken to apply to materials fabricated after export.

WORKMANSHIP AND FINISH.—5. The tubing shall be clean, smooth and free from all injurious defects, both inside and outside.

PHYSICAL PROPERTIES AND TESTS.—6. (a) *Flattening Test.*—A piece of tube, 2 diameters in length, shall be flattened with a hammer until it passes freely through a micrometer caliper set at three times the thickness of the tube wall. The tube must stand this test without showing cracks or other defects.

(b) *Expanding Test.*—A pin with a taper of one in eight shall be driven into one end of the tube until the tube's diameter is increased by one-sixth. The tube must stand this test without showing cracks, splits, or other defects.

(c) *Hydrostatic Pressure Test.*—Each tube shall be subjected to a hydrostatic pressure which will develop a tensile stress of 7,000 lbs. per sq. in. (4.92 kg./mm.²) in the tube, but in no case shall a test pressure of more than 1,000 lbs. per sq. in. (0.703 kg./mm.²) be required. Each tube must withstand this test without cracks, flaws, leaks, or other defects such as bulging.*

SELECTION OF TEST SPECIMENS.—7. (a) Each tube shall be subjected to a hydrostatic test. One tube from each lot of 100 or less shall be subjected to a flattening and to an expanding test.

(b) If any tube fails to pass the flattening or the expanding test, two more tubes representing the same lot shall be subjected to both tests. If either of these tubes fail in either test the lot which they represent shall be rejected.

(c) Any tube failing to meet the hydrostatic test shall be rejected.

DIMENSIONS AND TOLERANCES.—8. (a) *Tolerances.*—The

* The pressure to be applied shall be calculated from the formula

$$P = \frac{7,000 T}{R}$$

Where P = the hydrostatic pressure in pounds per sq. in.
 T = the thickness of the tube wall in inches.
 R = the internal radius of the tube.

following tolerances shall be allowed on wall thickness and outside diameter :

TOLERANCES FOR OUTSIDE DIAMETER AND WALL THICKNESSES.

Outside diameter. Inches.	Tolerances on outside diameter. Inch.	Wall thickness. Inch.	Wall- thickness tolerance. Inch.
0-0.50	± .002	0-0.0156	± 0.001
0.51-.75	± .0025	0.0157-.0312	± .002
.76-1.00	± .003	.0313-.0625	± .003
1.01-1.25	± .0035	.0626-.1250	± .005
1.26-1.50	± .004	.1251-.2500	± .008
1.51-1.75	± .0045	.2501-.3125	± .0125
1.76-2.00	± .005	.3126-.3750	± .0150
2.01	± (.25%)		
Millimetres.	Millimetre.	Millimetres.	Millimetre.
0-12.70	± 0.05	0-0.397	± 0.03
12.71-19.05	± .06	0.40-.79	± .05
19.06-25.40	± .08	0.791-1.59	± .08
25.41-31.80	± .09	1.591-3.17	± .13
31.81-38.10	± .10	3.171-6.35	± .20
38.11-44.45	± .11	6.351-7.94	± .32
44.46-50.80	± .13	7.941-9.53	± .38
50.81	± (.25%)		

(b) *Length*.—When no length is specified, tubes may be shipped in stock lengths of 10 ft. (3.04 m.) to 14 ft. (4.27 m.). When ordered in definite lengths no length shall be less than that specified.

3N16—Specifications for Aluminium Alloy Sheet.

GENERAL.—1. The general specifications, 1G1, shall form, according to their applicability, a part of these specifications.

MATERIAL.—2. The aluminium alloy of these sheets shall be made from standard No. 1 aluminium conforming to I.A.S.B. specification 2N1. The specific gravity of the aluminium alloy shall not be greater than 2.85.

MANUFACTURE.—3. No scrap shall be used other than that produced in the manufacturer's own plants and which is of the same composition as the material specified.

WORKMANSHIP AND FINISH.—4. (a) All sheets shall be sound, flat, free from buckles, seams, discoloration or other surface defects.

(b) Any sheet may be rejected because of injurious defects or faults in manufacture at any time, notwithstanding that it has previously passed inspection; it shall be returned to the manufacturer at the latter's expense. This clause shall not be taken to apply to materials fabricated after export.

PHYSICAL PROPERTIES AND TESTS.—5. The sheets may be specified in either of two tempers as desired. Specimens cut in any direction from the sheets must have the following physical properties :

Tensile Test.—(a)

	Temper 1	Temper 2
	Pounds per square inch	Pounds per square inch
Minimum tensile strength	55,000	50,000
Minimum yield point	38.6	35.1
Minimum elongation in 2 inches	17.5	17.5
	15 per cent.	20 per cent.

Bend Test.—(b) Strips cut from sheets of either temper shall withstand being bent cold through an angle of 180 deg. around a diameter equal to four times the thickness of the sheet.

SELECTION OF TEST SPECIMENS.—6. Test specimens shall be cut from a sheet selected from each 500 pounds or individual lot submitted of less than 500 pounds.

DIMENSIONS AND TOLERANCES.—7. The tolerances upon sheets shall be those given in the table below :

Brown & Sharpe gauge	Thick- ness Inch	Tolerance Inch	Thick- ness Millimetres	Tolerance Millimetre
10-17	0.019-0.0453	± 0.003	2.588-1.151	0.070
18-26	.0403-.0159	± .002	1.024-.404	.051

DELIVERY, SHIPPING AND PACKING.—8. The sheets shall be delivered in boxes of gross weight not greater than 220 lbs. (100 kg.).

3S29—Specifications for annealed Carbon Steel Forgings and Stampings.

(65,000 lbs. per sq. in. tensile strength.)

GENERAL.—1. The general specifications, 1G1, shall form, according to their applicability, a part of these specifications.

MATERIAL.—2. The steel from which these forgings or stampings are made shall conform to I.A.S.B. specification 3S2; the steel has the following comparison :

Number	Carbon	Man- ganese	Phos- phorus maxi- mum	Sulphur maxi- mum
1035	0.30-0.40	0.50-0.80	0.045	0.050

MANUFACTURE.—3. *Heat Treatment.*—(a) All forgings or stampings shall be annealed.

(b) Forgings or stampings which fail to meet the physical tests may, at the option of the purchaser, be reannealed.

WORKMANSHIP AND FINISH.—4. (a) The forgings and stampings must be uniform in quality, free from pipes, laps, cracks, twists, seams, and must have a workmanlike finish.

(b) A forging or stamping may be rejected at any time because of injurious defects or faults which are revealed by manufacturing operations, notwithstanding that it has previously passed inspection. Such rejected forgings or stampings shall be returned to the manufacturer at his expense. This clause shall not apply to materials fabricated after export.

PHYSICAL PROPERTIES AND TESTS.—5. (a) The heat-treated forgings or stampings shall have the following physical properties :

Tensile Test.—(b)

	Pounds per square inch	Kilograms per square millimetre
Minimum tensile strength	65,000	45.7
Minimum yield point	36,000	25.3
Minimum elongation in 2 inches or proportional gauge length		25 per cent.
Minimum reduction of area		50 per cent.

Impact Test.—(c) When impact-testing machines of the pendulum type are available, tests shall be carried out if required to determine the specific impact work of rupture in foot-pounds (or kilogrammetres). Results markedly lower than the average for this type of material will be sufficient cause for further investigation (or reheat treatment) of the material.

Brinell Hardness Test.—(d) The Brinell hardness test shall be made after the tensile test has been met. The procedure shall be as follows :

(1) Forgings for a Prolongation for Tensile Test Specimens : A hardness test shall be made on the prolong and on the opposite end of the forging. The hardness values obtained must agree within 3 per cent. Hardness values of other forgings in the same lot must agree with the average of the two test values within 3 per cent.

(2) Forgings or Stampings Without Prolongations : Hardness tests shall be made on the forgings or stampings selected for the tensile test and must agree within 3 per cent. The hardness values of other forgings or stampings in the same lot must agree with the average of the values so obtained within 3 per cent.

(3) Forgings or Stampings from which a Tensile Test Specimen can not be Procured : A hardness test shall be made on the forged bar representing the forgings or stampings. The hardness values of the forgings or stampings in the lot must agree with that obtained on the bar within 3 per cent.

SELECTION OF TEST SPECIMENS.—6. (a) *Forgings or Stampings weighing 6 lbs. (3.7 kg.) or over.*—If desired, each piece may be required to have a prolongation for the tensile test. Two per cent. of the forgings or stampings in each lot shall be subjected to the tensile test unless a tensile test is specified for each forging or stamping.

(b) *Forgings or Stampings weighing less than 6 lbs. (3.7 kg.) and of suitable section for securing a Tensile Test Specimen.*—Two per cent. of the forgings or stampings shall be taken for the tensile test.

(c) Forgings or stampings from which no tensile test specimen can be secured shall be represented by a bar forged from the same material, and to the ruling section of the forgings or stampings in the lot. The bar must be heat-treated with the lot which it represents.

(d) At least one tensile test shall be made for each lot of 50 forgings or stampings.

(e) A hardness test may be required on each forging or stamping offered. At last 25 per cent. of the pieces in each lot shall be tested for hardness.

(f) All the forgings or stampings in a lot shall be heat treated at the same time, and if possible shall be from the same heat of steel.

DIMENSIONS AND TOLERANCES.—7. The forgings and stampings shall conform to the dimensions on the drawings within the tolerances specified. Surfaces which are to be machined shall admit of finishing to the required dimensions without leaving trace of the original surface.

PACKING, SHIPPING, AND DELIVERY.—8. Small forgings or stampings shall be boxed for shipment; the gross weight of individual boxes must not exceed 220 lbs. (100 kg.). Each kind and lot of forgings or stampings shall be kept separate as inspected.

3S30—Specifications for Heat-treated Carbon Steel Forgings and Stampings.

(80,000 lbs. per sq. in. Tensile Strength.)

GENERAL.—1. The general specifications, 1G1, shall form, according to their applicability, a part of these specifications.

MATERIAL.—2. The steel from which these forgings or stampings are made shall conform to I.A.S.B. specification 3S2; the steel has the following composition:

Number	Carbon	Man- ganese	Phos- phorus, maxi- mum	Sulphur, maxi- mum
1035	0.30-0.40	0.50-0.80	0.045	0.050

MANUFACTURE.—3. *Heat Treatment.*—(a) Forgings or stampings should be annealed before heat treatment.

(b) Forgings or stampings which fail to meet the physical tests may, at the option of the purchaser, be reheat treated.

WORKMANSHIP AND FINISH.—4. (a) The forgings and stampings must be uniform in quality, free from pipes, laps, cracks, twists, seams, and must have a workmanlike finish.

(b) A forging or stamping may be rejected at any time because of injurious defects or faults which are revealed by manufacturing operations, notwithstanding that it has previously passed inspection. Such rejected forgings or stampings shall be returned to the manufacturer at his expense. This clause shall not apply to materials fabricated after export.

PHYSICAL PROPERTIES AND TESTS.—5. (a) The heat-treated forgings or stampings shall have the following physical properties:

Tensile Test.—(b)

	Pounds per square inch	Kilograms per square milli- metre
Minimum tensile strength..	80,000	56.2
Minimum yield point ..	60,000	42.2
Minimum elongation in 2 inches, or proportional gauge length ..	22 per cent.	
Minimum reduction of area ..	45 per cent.	

Impact Test.—(c) When impact-testing machines of the pendulum type are available tests shall be carried out if required to determine the specific impact work of rupture in foot-pounds (or kilogrammetres). Results markedly lower than the average for this type of material will be sufficient cause for further investigation (or reheat treatment) of the material.

Brinell Hardness Test.—(d) The Brinell hardness test shall be made after the tensile test has been met. The procedure shall be as follows:

(1) Forgings with a Prolongation for Tensile Test Specimens: A hardness test shall be made on the prolong and on

the opposite end of the forging. The hardness values obtained must agree within 3 per cent. Hardness values of other forgings in the same lot must agree with the average of the two test values within 3 per cent.

(2) Forgings or Stampings Without Prolongations: Hardness tests shall be made on the forgings or stampings selected for the tensile test and must agree within 3 per cent. The hardness values of other forgings or stampings in the same lot must agree with the average of the values so obtained within 3 per cent.

(3) Forgings or Stampings from which a Tensile Test Specimen can not be procured: A hardness test shall be made on the forged bar representing the forgings or stampings. The hardness values of the forgings or stampings in the lot must agree with that obtained on the bar within 3 per cent.

SELECTION OF TEST SPECIMENS.—6. (a) *Forgings or Stampings weighing 6 lbs. (3.7 kg.) or over.*—If desired, each piece may be required to have a prolongation for the tensile test. Two per cent. of the forgings or stampings in each lot shall be subjected to the tensile test, unless a tensile test is specified for each forging or stamping.

(b) *Forgings or stampings weighing less than 6 lbs. (3.7 kg.) and of suitable section for securing a Tensile Test Specimen.*—Two per cent. of the forgings or stampings shall be taken for the tensile test.

(c) Forgings or stampings from which no tensile test specimen can be secured shall be represented by a bar forged from the same material and to the ruling section of the forgings or stampings in the lot. The bar must be heat treated with the lot which it represents.

(d) At least one tensile test shall be made for each lot of 50 forgings or stampings.

(e) A hardness test may be required on each forging or stamping offered. At least 25 per cent. of the pieces in each lot shall be tested for hardness.

(f) All the forgings or stampings in a lot shall be heat treated at the same time, and if possible shall be from the same heat of steel.

DIMENSIONS AND TOLERANCES.—7. The forgings and stampings shall conform to the dimensions on the drawings within the tolerances specified. Surfaces which are to be machined shall admit of finishing to the required dimensions without leaving trace of the original surface.

PACKING, SHIPPING, AND DELIVERY.—8. Small forgings or stampings shall be boxed for shipment; the gross weight of individual boxes must not exceed 220 lbs. (100 kg.). Each kind and lot of forgings or stampings shall be kept separate as inspected.

(To be continued.)

THE LAW OF THE AIR.

IN the unavoidable absence of Lord Rothermere, Rear-Admiral Mark Kerr, presided at the first of two Rhodes lectures on "The Recent and Future Growth of Aerial Law" given by Dr. Harold D. Hazeltine (Reader of English Law in the University of Cambridge), at the University College, London, on Monday. Dr. Hazeltine said that the entire airspace above the surface of the earth had, in theory, come within the domain of human laws, and draft codes of national and international laws had been formulated, anticipating the needs of the future. In the constitutional law of states the most marked feature of growth had been the firm establishment of the principle that each state possesses full and absolute sovereignty in the air above its territory and territorial waters. It was recognised, however, that over the high seas the air was free to all.

Turning to the civilian use of aircraft the lecturer said the aerial post would naturally be administered by the Post Office, and many matters of commercial aerial navigation would come under the control of the Board of Trade,

but for aerial police and aerial Customs new Government agencies would have to be evolved. Marking out of routes with aerial ports and aerodromes, lights, and pilotage might lead to the establishment of bodies with duties corresponding to Trinity House in maritime matters. Life-saving appliances would have to be controlled, and possibly in time Air Courts would deal with aerial law. There was general agreement among jurists that all aircraft ought to be invested with nationality, and with regard to private craft a possible solution might be found in following the principle of the Merchant Shipping Act; craft should be registered and pilots licensed. Future aerial communication would share with sea communication the binding of the Empire together, and close study of aerial legal problems was required from lawyers and statesmen.

The Chairman said that undoubtedly all craft would have to be registered with a Plimsoll mark, and perhaps an aerial "Lloyd's" would arise.

against Italy may be imminent. In the meantime the Italian bombers claim to have destroyed one of the sheds.

German Attack on Convoy.

THE *Nieuwe Rotterdamsche Courant* reports that an attack was made on February 27th by six German aeroplanes on the Swedish barque "Maorilands," which was being towed to England from Rotterdam by the British tug "Lady Carmichael." Some of the crew of the barque jumped over board, and were afterwards picked up. Those who remained on board received no injury.

According to a statement by Capt. Monk, of the "Maorilands," Capt. John Dempster, of the "Lady Carmichael," succeeded by his seamanship and skill in steering his tug, with the barque in tow, amid a shower of bullets, back at full speed to the New Waterway. The tug shows everywhere marks of attack.

Garros and Marechal Free.

EVIDENTLY the French Consul at Rotterdam was misinformed with regard to Garros and Marechal, for not only have these famous aviators escaped, but they are now safely back in France, having reached Paris on Sunday from London.

Aerial Services Over North Sea.

NORWAY appears to be very active in promoting commercial aviation enterprises. It is now announced from Christiania that a company is being formed for the establishment of flying services between Norwegian towns and between Stavanger and Aberdeen and Christiania and Copenhagen.

Zeppelins Against Italy?

FROM information received from Rome to the effect that several Zeppelin hangars are being erected behind the enemy's lines in the Friule, it is thought that a Zeppelin offensive

Personals

Casualties.

Lieutenant SYDNEY ARMSTRONG, R.G.A., attd. R.F.C., who was killed in action on February 18th, aged 18, was the only son of Major and Mrs. Armstrong, of 13, Connaught Mansions, Battersea Park, S.W.

Captain E. EARLE BARNES, R.E., attached R.F.C., killed in France on November 7th, 1917, was educated at St. Paul's. After serving an apprenticeship at the Crewe Works he qualified A.M.I.C.E., intending to take an appointment in India. His health did not permit of this, and shortly before the outbreak of war he obtained a temporary commission in the Royal Engineers. He went to France in June, 1915, and saw active service for a year, being gassed on one occasion. In June, 1916, he transferred to the R.F.C., in which he speedily qualified as a pilot. After serving for some time in England he went to France in October, 1917, as Flight-Commander of a night flying squadron. Captain Barnes leaves a widow and a son, who was born on the eve of his father's death.

Second Lieutenant RONALD W. ST. GEORGE CARTWRIGHT, R.F.C., who was killed in action on February 26th, aged 23, was the son of Arthur Cartwright, late H.M. Inspector of Schools for Worcestershire, and Mrs. Cartwright, of Rothbury, Hay, Hereford.

Captain ARCHIBALD WILLIAM FIELD, R.F.C., who was reported "missing," on January 9th, and is now officially reported as having been killed in action on that date, was the third son of Mr. Edward Field, Clerk of the Peace for Warwickshire, and of Mrs. Field, of Blackdown Hill, Leamington. He was educated at Orwell House, Felixstowe, and at Rugby. At the outbreak of war, he was in Vancouver Island, but immediately returned home, enlisted in the Shropshire Yeomanry, was granted a commission in the R.N.V.R. on September 17th, 1914, and went abroad with the armoured cars on October 2nd. He was in Antwerp during the siege, and saw much of the fighting throughout Flanders, including the first battle of Ypres, and the battle of Loos, first with the armoured cars, and later, when he exchanged into the army as a captain in the R.F.C. He was wounded in aerial combat on September 25th, 1916, and returning home, he took his pilot's certificate, and again went abroad on September 27th, 1917.

Mr. GASKELL, the chief clerk at Bow Street, has been informed that his only son, a promising young officer in the R.F.C., had died in France on March 1st from injuries two days previously whilst engaged in aviation work.

Second Lieutenant DOUGLAS STANLEY GORDON, R.F.A., attached R.F.C., who was killed in action whilst flying abroad on February 21st, aged 29, was the only surviving son of the Rev. and Mrs. S. C. Gordon, of Bromley, Kent.

Captain JOHN SHERIDAN GREGORY, R.F.C., formerly of the Army Service Corps, who has been killed in action, was educated at Westminster School and Trinity College, Cambridge, and entered the Middle Temple as a student to qualify as a barrister-at-law. When war broke out on August, 1914, he had passed all the Bar examinations except the final. After serving for some time as a Second Lieutenant in the Army Service Corps, he in 1917 was attached to the R.F.C. A fortnight before his death Captain Gregory received the 1914 Star for his past services in France. He was the younger son of Lieutenant-Colonel G. M. Gregory, V.D., and of Mrs. Gregory, of Gunterstone Road, West Kensington, and was 28 years of age.

Lieutenant A. HUTCHINSON, King's Liverpool Regiment, attached R.F.C., who was missing since January 19th and now reported killed, was the youngest son of the late John Heap Hutchinson and brother of W. Hutchinson, Lea-by-Backford, near Chester.

Captain LAURENCE MINÔT, R.F.C., who was reported missing on July 28th, 1917, is now, from information obtained from German sources by the British Red Cross Society, officially concluded to have been killed in aerial combat on that date near Heulebeke. He was born in 1896, and entered Dulwich College in 1909, was made school prefect and head of the house in May, 1914, in which year he also took his First XV colours, and was elected to the field sports board in 1914. He left Dulwich in April, 1915, proceeding straight to a flying school, taking his certificate in the following July. He was given a commission in the R.F.C. at the end

of the month, and on receiving his "wings" he was sent to Flanders. He was gazetted Flight-Commander on July 28th, 1916, and at the time of his death had been on active service in Flanders and France 17 months.

Flight-Lieutenant GEOFFREY MOORE, B.Sc., R.N., officially reported killed on February 26th, aged 23, was the youngest son of Lieutenant-Colonel and Mrs. Maurice Moore, of Westburn House, Sunderland, and a grandson of Mr. Samuel Storey, formerly M.P. for that borough. He was educated at Haileybury and at Armstrong College, Newcastle-on-Tyne, where he graduated B.Sc. in 1915. While studying he worked in the shops and in an aerodrome in order to acquire practical knowledge. He joined the R.N.A.S., and after four months' flying at home was sent to Gibraltar. He applied for transfer to "where there was more fighting," and was sent to the East, where he has been flying for the past 15 months.

Second Lieutenant M. H. ORCUTT, R.F.C., who was killed in action on March 1st, aged 20, was the second son of Mr. and Mrs. H. F. L. Orcutt, Rowington Hall, near Warwick.

Captain ARTHUR F. E. PITMAN, Seaforth Highlanders, attached R.F.C., was reported missing on January 3rd, and information has now been received from the British Red Cross, through their Copenhagen agency, that Captain Pitman was killed in action on that date. Captain Pitman, who was the eldest son of Mr. John S. Pitman, of 22, Douglas Crescent, Edinburgh, was educated at Evelyns and at Eton, where he was in the Eton Eight, a member of "Pop," and on the Athletics Committee. On the outbreak of war he left Eton, a year before his time, and obtained a commission on September 4th, 1914, as second lieutenant in the 5th Seaforth Highlanders. He went to France with his battalion on May 1st, 1915. After serving for 18 months in France, during which time he was A.D.C. to the Divisional General, and afterwards captain and adjutant of his battalion, he was seconded for service with the Machine-Gun Corps, and acted as instructor to a "Tanks" Cadet Corps for some months in this country. In June, 1917, he was appointed to the R.F.C., and, after training, he went out to the front as a pilot on November 1st, 1917.

Lieutenant (Temporary Captain) DONALD CAMPBELL RUTTER, M.C., R. Sussex Regiment, Special Reserve, and R.F.C., who was reported missing on June 7th, 1917, at Messines, and now officially reported killed in aerial combat on that date, was the eldest son of Hugh Campbell Rutter, J.P., and Hilda Rutter, of Hazelwood, Morden, Surrey. His age was 20.

Lieutenant CHARLES DALKEITH SCOTT, Can. Inf., attached R.F.C., who was reported missing on September 30th, 1917, and is now reported killed in aerial combat on that date, was the only son of the late Captain Dalkeith Martin Scott (superintendent, Carmarthenshire Constabulary) and of Mrs. Scott, of 47, Rivers Street, Bath, and grandson of the late Lieutenant-Colonel Edward Scott, of The Priory, Maidstone. He was educated at Bath College, where he was in the first Rugby XV, and also for several years served in the Cadet Corps. On leaving college he took up work in Vancouver Island, and was there on the outbreak of war, when he at once enlisted in Victoria, and crossed to England with the First Canadian Contingent in October, 1914. Early in 1915 he went over to France, and served with the 16th Canadian Battalion at the second Battle of Ypres, at Richebourg l'Avoué, and the various battles in which the 1st Canadians took part during that year. In January, 1916, he was given a commission in the Canadian Infantry, serving at the front until October, 1916, when he was wounded and sent home. On recovery he was attached to the R.F.C., and, taking his pilot's certificate early in September, 1917, was sent out to the front, where, when on special duty behind the German lines, he was attached by a "large formation of enemy scouts," and seemed to be overwhelmed and driven down "after a fine fight."

Second Lieutenant ROBERT HUGH SLOLEY, R.G.A. and R.F.C., who was killed in action on October 1st, 1917, aged 20, was the only surviving son of Sir Hubert and Lady Sloley.

Second Lieutenant REGINALD FITYROY TALBOT, R.F.C. (late manager of Bukit Jelutong Estate, Ayer Kuning, F.M.S.), who was previously reported missing and now known to have been killed on August 26th, 1916, was the youngest son of the late Major Francis A. B. Talbot and Mrs. Talbot, 89,

Philbeach Gardens, S.W., and husband of Marguerite Talbot, Ivy Holt, Dorking.

Lieutenant GEORGE HENDERSON WALKER, South Lancs. Regiment and R.F.C., who was missing since July 28th, 1917, and now officially presumed killed on that date, aged 22, was the second son of Mr. and Mrs. W. H. Walker, of Chorlton Hall, near Chester, and The Barony, Maughold, Isle of Man.

Second Lieutenant HUMPHREY HAMILTON WILSON, R.F.C., who was killed in action on February 19th, was the second son of Mr. and Mrs. Wilson, of Yokohama, Japan. He was educated at Weymouth College, where he was in the XI in his last year. He left in 1915, and was apprenticed to Messrs. Vickers at Barrow. At the beginning of 1917 he joined the R.F.C., obtained his wings in June, and went to the Front in August.

Second Lieutenant GERALD ARTHUR BLOOMFIELD, R.F.C., who died on February 13th of injuries received two days previously in an accident while flying in England, aged 23, was the eldest surviving son of Mr. George Bloomfield, of Maidenhead. He was educated at the Higher Grade School, Brighton, and the Technical School, Maidenhead, and afterwards trained as an architect, and was for some time in the surveyor's office of the Maidenhead Borough Council. He enlisted in the R.F.A. on August 30th, 1914, and for over a year he acted as instructor in gunnery at an officers' cadet school, but was then recommended for a commission and gazetted Second Lieutenant in the R.F.A. Later he transferred to the R.F.C., and qualified as a flying officer about a month before his death.

Flight Lieutenant C. H. MURRAY CHAPMAN, R.N., who was accidentally killed while flying on February 23rd, was the elder son of Mr. Charles Capel Chapman, late of the War Office, and of Mrs. Chapman. He was born in 1892, at Chislehurst, and was educated at Monmouth Grammar School and Hume Hall, Manchester University. On the outbreak of war, having a knowledge of wireless telegraphy, he offered his services to the Navy, and was given a post as wireless operator, in H.M.S. "Revenge," taking part in the action off the Belgian Coast under the late Admiral Hood in October, 1914. Later he was transferred to a trawler, and spent the first winter of the war mine-sweeping in the North Sea; his ship, on one occasion, undertaking a week of voluntary service in a specially mined area. In June, 1915, Flight Lieutenant Chapman obtained a commission in the R.N.A.S., and was granted his pilot's certificate four weeks later by the Royal Aero Club. In September of the same year, he was sent with a squadron to France, but, owing to engine trouble, met with an accident near Calais, receiving severe injuries, which necessitated six months' sick leave. For the past 14 months Flight Lieutenant Chapman had done valuable work as an instructor at a home air station. He was married on March 22nd, 1916, to Olive, eldest daughter of Mr. and Mrs. Garry Simpson, of 89, Lancaster Gate, and a daughter, who died at birth, was born to them on July 13th last.

Lieutenant STANLEY CHAPPELL, R.F.C., who was killed in England on February 28th, aged 19, was the son of E. B. and the late Mrs. Chappell, Streatham.

Second Lieutenant REGINALD JOHN COLLIER, R.F.C., who was accidentally killed when flying on February 12th, aged 19, was the only son of W. F. Collier, 123, Hamilton Road, Bangor.

Captain RALPH H. JARVIS, M.C., R.F.C., who was killed in England on February 27th, aged 27, was the son of Edmund and Clara Jarvis, and grandson of the late Sheriff Jarvis, of Toronto, Canada.

Lieutenant VERNON WILLIAM NUTKINS, R. Scots Fus., attached R.F.C., who was accidentally killed abroad on February 19th, was the grandson of Mr. Alfred Saunders, of 37 and 38, Mark Lane, and Erin Villa, Putney, S.W. He was educated at University School, Hastings, which he left at the age of 17 in 1913. He entered Sandhurst in the following year, and was gazetted to the 3rd Battalion 7th Royal Scots Fusiliers, and was senior subaltern in his battalion. Later on he was posted to another battalion of the same regiment, and was made Lewis machine-gun officer, having previously been musketry officer to the 3rd Battalion. He went to the Front in 1916, and was twice wounded, and badly shaken by a shell which burst close to him.

Lieutenant VERNON RADCLIFFE STEWART, A.S.C., attached R.F.C., who was killed December 5th, 1917, whilst instructing at Castle Bromwich, was the eldest surviving son of Dr. and Mrs. J. B. Stewart, of Haslingden, Lancashire. He was educated at Giggleswick School, Settle, and was an accomplished

athlete and head of the school. He led the school on the Rugby, cricket, and hockey fields and in the fives and racquets courts. He was a colour-sergeant in the O.T.C. Whilst at school he was a member of Kersal Rugby Club, and on leaving took up the study of medicine at St. Mary's Hospital, Paddington. He passed his second M.B., and upon the outbreak of war obtained a commission in the A.S.C. He joined the 29th Division and went to the Dardanelles, March 1915. He saw the first landing, and in September was invalided off the Peninsula with dysentery. Whilst in the Dardanelles he was torpedoed, and for his work in the East was awarded a permanent commission in the Regular Army. In June of 1916, he joined the R.F.C., and went to France in September. He was invalided again, after which he was passed for home service, and went as instructor to Castle Bromwich, and it was whilst carrying out his duties there that he was killed on December 5th, 1917, aged 23 years.

Lieutenant DAVID CECIL SANBY THOMAS, Welsh Regiment, attached R.F.C., has been accidentally killed while flying abroad. He was the eldest son of Mr. J. Sanby Thomas, of Bank House, Pontypridd, and was educated in H.M.S. "Conway," and at the King's School, Worcester, where he represented his school at cricket and football. At the outbreak of war he joined the U.P.S. Brigade, whence he was commissioned in the 25th Welsh Regiment. He served in Gallipoli and Egypt, and in 1917 transferred to the R.F.C. He was acting as instructor at the time of his death on February 17th.

Captain STUART CHRISTIAN TINNE, R.W. Kent Regiment and R.F.C., who has died suddenly of heart failure at Hythe, was the son of the late Theodore Tinne and Mrs. Tinne, The Chine, Wrecclesham, Farnham.

Second Lieutenant ERIC WILFRED WHITEHEAD, R.F.C., who was killed on February 16th, in a flying accident, aged 19, was the youngest son of Mr. and Mrs. J. WHITEHEAD, of Croydon.

Married.

Miss LOIS BALL, daughter of Alderman and Mrs. A. Ball, The Park, Nottingham, sister of the late Captain Albert Ball, V.C., and of Lieutenant Cyril Ball, also the R.F.C., now a prisoner of war in Germany, was married in Nottingham on March 2nd to Lieutenant G. STAFFORD ANDERSON, Leicestershire Regiment. The bridesmaids were Miss Young, who was the fiancée of Captain Ball, and Miss Marie Price, who is engaged to Lieutenant Cyril Ball.

The marriage took place very quietly at Winterbourne Stoke, Wilts, on March 4th, between Captain MALCOLM HENDERSON, D.S.O., Seaforth Highlanders and R.F.C., and ELIZABETH, daughter of FREDERICK CRAIG, of St. Columb Minor, North Cornwall.

On March 2nd, at St. John the Divine's, Frankby, Second Lieutenant HENRY W. HOLMES, R.E. and R.F.C., was married to AMY, younger daughter of the Rev. C. A. W. CRUTTWELL and Mrs. Cruttwell, of Frankby Vicarage, Cheshire.

On February 20th, at Chapel Royal, Savoy, Lieutenant GERALD G. MOORE, Black Watch, attached R.F.C., was married to MARJORIE, widow of JOHN MYERS and daughter of the late Alfred Puttick.

To be Married.

The engagement is announced of Second Lieutenant STEWART EARL ARRIDGE, K.O.Y.L.I. and R.F.C., of Sheffield, son of the late W. H. C. Arridge, and Miss MARGARET IRENE POPE, daughter of the late E. E. Pope and Mrs. Margaret Pope, of Streatham.

The marriage arranged between Captain J. B. E. CROSBEE, Worcestershire Regiment and R.F.C., only son of Mr. and the late Mrs. W. A. Crosbee, of Malvern, and ALCYONE, only daughter of Mr. and Mrs. STILLINGFLEET BOWLES, The Shrubbery, Malvern, will take place on the 14th inst. at St. Matthew's Church, Bayswater, at 2.30.

The engagement is announced between Captain LAURENCE DIRCKS, R.F.C., only son Mr. and Mrs. R. Dircks, and Miss CECIL BATEMAN, eldest daughter of Mr. and Mrs. A. G. Bateman.

The marriage arranged between RICHARD CHARLES FARROW, Canadian Field Artillery and R.F.C., only son of Mr. and Mrs. C. H. Farrow, of Vancouver, British Columbia, and MARY HAY MURRAY, youngest daughter of the late Evelyn Hay Murray and the late Mrs. Murray, of Hascombe, Godalming, will take place at St. Peter's, Hascombe, on March 16th, at 2.



The British Air Service

"PER ARDUA AD ASTRA"



UNDER this heading are published each week the official announcements of appointments and promotions affecting the Royal Naval Air Service and the Royal Flying Corps (Military Wing) and Central Flying School. These notices are not duplicated. By way of instance, when an appointment to the Royal Naval Air Service is announced by the Admiralty it is published forthwith, but subsequently, when it appears in the LONDON GAZETTE, it is not repeated in this column.

Royal Flying Corps (Military Wing).

London Gazette Supplement, February 23rd.

The following appointments are made:—

Squadron Commanders.—From Flight Commanders and to be Temp. Maj. whilst so employed:—Capt. P. A. O. Leask, R. Ir. Rif., Temp. Capt. J. Blackwood, Gen. List; Nov. 25th, 1917. Lieut. (Temp. Capt.) H. G. Dean, York and Lanc. R.; Dec. 10th, 1917. Lieut. (Temp. Capt.) A. T. Harris, S.R.; Temp. Capt. S. W. Price, M.C., Gen. List; Lieut. (Temp. Capt.) G. E. O. Osborne, M.G.C., Canadian Local Force; Lieut. (Temp. Capt.) J. K. Aird, S.R.; Temp. Capt. N. C. Sampson, Gen. List; and 2nd Lieut. (Temp. Capt.) F. Sowrey, D.S.O., M.C., R. Fus.; Lieut. (Temp. Capt.) F. V. Woodman, Saskatchewan R.; Capt. A. Somervell, M.C., K.O.S.B. (T.F.); Temp. Capt. W. Sowrey, Gen. List; Jan. 1st. Capt. R. G. Gould, M.C., S.R.; Jan. 19th. Lieut. (Temp. Capt.) V. A. H. Robeson, S.R.; Feb. 1st.

Flight Commanders.—From Flying Officers. Capt. W. B. Crossley, Lan. Fus. (T.F.); Sept. 15th, 1917. And to be Temp. Capt. whilst so employed:—Lieut. C. Turner, Worc. R.; Dec. 14th, 1917. Lieut. E. Gribben, M.C., R. Ir. R., S.R.; Jan. 1st. Lieut. N. G. Cardia, S.R.; Lieut. L. M. Barlow, M.C., S.R. (since killed); Jan. 23rd. Lieut. J. A. Middleton, R.F.A. (T.F.), and to be sec'd.; Feb. 4th. Lieut. F. E. Brown, R. Dub. Fus., S.R.; Feb. 6th.

Flying Officers.—Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank:—G. D. Horton; Nov. 25th, 1917. C. S. Johnson; Dec. 2nd, 1917. C. D. Taylor; Dec. 6th, 1917. R. W. Gunner; Jan. 24th. W. W. White; Jan. 27th. W. S. K. Scudamore; Jan. 29th.

Flying Officer (Observer).—Lieut. H. B. Mason, R.A., and to be sec'd.; Dec. 1st, 1917, seniority Aug. 18th, 1917. (Substituted for the notification in the Gazette of Feb. 14th.)

Instructor in Gunnery.—(Graded as an Equipment Officer, 1st Class).—Temp. Lieut. H. B. Griffith, Gen. List, from an Asst. Instr. in Gunnery (graded as an Equipment Officer, 2nd Class), and to be Temp. Capt. whilst so employed; Jan. 1st.

Assistant Instructors in Gunnery.—(Graded as Equipment Officers, 2nd Class).—Temp. 2nd Lieut. H. A. Heaton, M.C., R. Lan. R., to be transfd. to R.F.C. Gen. List, and to be Temp. Lieut. while so employed; Dec. 1st, 1917. Capt. M. H. Park, M.C., E. Ontario R., from an Asst. Instr. (graded as an Equipment Officer, 3rd Class); Temp. 2nd Lieut. E. H. Jones, Gen. List, a Flying Officer (Obs.), and to be Temp. Lieut. while so employed; Jan. 1st.

Park Commander.—Temp. Capt. J. R. Grant, Gen. List, from an Equipment Officer, 1st Class, and to be Temp. Maj. while so employed; Feb. 1st.

Special Appointment.—(Graded as a Park Commander).—Lieut. (Temp. Capt.) H. K. Maxwell, S.R., an Equipment Officer, 1st Class, and to be Temp. Maj. while so employed; Dec. 27th, 1917.

Equipment Officers, 1st Class.—From the 2nd Class, and to be Temp. Capt. whilst so employed:—Lieut. H. R. Spence, S.R.; Jan. 4th. Temp. Lieut. A. B. Wiggins, Gen. List; Temp. Lieut. C. A. Stevenson, Gen. List; Temp. Lieut. W. E. Phillips, Gen. List; 2nd Lieut. (Temp. Lieut.) M. F. A. Paine, S.R.; Lieut. H. B. FitzHerbert, S.R.; Feb. 1st. 2nd Class.—From the 3rd Class, and to be Temp. Lieuts. whilst so employed:—Temp. 2nd Lieuts. L. G. Stevenson, Gen. List; R. L. Cobb, Gen. List, and F. O. Burnley, Gen. List; 2nd Lieuts. R. D. Whitt, S.R., H. Chapman, S.R., R. O. Clark, S.R., T. P. Shilloock, S.R., and F. A. Dickinson, R.F.A., S.R., Qrmer. and Hon. Capt. A. M. Watson, Shrops. L.I.; Feb. 1st.

General List.—To be Temp. Lieuts.:—Temp. 2nd Lieut. J. W. Chapman; Jan. 20th. Temp. Lieut. A. J. Moody, from R. Mar.; Jan. 26th. Temp. 2nd Lieut. E. T. Hall resigns his commission; Feb. 24th. Temp. 2nd Lieut. L. L. Leleu, attd. D. of Corn. L.I., a Flying Officer, is transfd. to R.F.C. Gen. List; July 28th, 1917. Pte. A. Ginger, from A.S.C., to be Temp. 2nd Lieut.; Sept. 3rd, 1917. From R.F.C. to be Temp. 2nd Lieuts.:—Temp. Sergt.-Maj. W. A. Baker, Corpl. E. R. Brown; Jan. 19th. Corpl. W. S. Eastaugh; Feb. 2nd. Temp. Sergt.-Maj. W. G. Mantell, J. A. Cundy; Feb. 1st.

Memoranda.—Temp. Sergt.-Maj. from R.F.C., to be 2nd Lieuts., whilst serving with R.F.C.:—J. M. Knight, E. R. Wood, F. V. Wright; Feb. 1st.

London Gazette Supplement, February 25th.

The following appointments are made:—

Flight Commander.—Lieut. N. C. Jones, R.F.A. (T.F.), from a Flying Officer, and to be Temp. Capt. while so employed; Jan. 30th.

Flying Officers.—Lieut. L. P. Sedgwick, E. Surr. R., S.R., from a Flying Officer (Obs.); Nov. 12th, 1917, seniority from Aug. 14th, 1916. Lieut. R. U. Hoddinott, R.F.A., S.R.; Dec. 22nd, 1917. Lieut. C. Byron, R. Dub. Fus., S.R., and to be sec'd.; 2nd Lieut. F. C. Yandell, Yeo. (T.F.), from E. Kent R., and to be sec'd.; Dec. 23rd, 1917. Lieut. S. M. Gibson, Manitoba R., Can. Exped. Force; Dec. 27th, 1917. Lieut. J. E. Bennett, Yeo. (T.F.), and to be sec'd.; Temp. 2nd Lieut. R. Hunter, attd. Sco. Rif., and to be transfd. to R.F.C. Gen. List; Dec. 28th, 1917. Temp. Lieut. E. B. Hamel, Gen. List, from a Flying Officer (Obs.); Jan. 23rd, seniority from Dec. 29th, 1916. 2nd Lieut. P. T. Bruce, L'pool R. (T.F.), and to be sec'd.; Jan. 26th. Lieut. H. G. Clements, Alberta R., Can. Exped. Force; Lieut. C. E. L. Skedden, Cent. Ontario R., Can. Exped. Force; Lieut. J. H. Spence, R.A., from a Flying Officer (Obs.), seniority from Feb. 13th, 1917; Jan. 27th. Temp. 2nd Lieut. G. P. Olley, Gen. List; Jan. 28th. Temp. 2nd Lieut. W. B. Hogg, attd. K.O. Sco. Bord., and to be transfd. to R.F.C. Gen. List; Jan. 29th. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank:—V. L. Sage; Nov. 22nd, 1917. J. P. Murray; Nov. 26th, 1917. S. H. B. Emms, J. Nicolson; Dec. 26th, 1917. D. L. Grahame; Dec. 27th, 1917. D. Wedderburn, C. E. Thompson; Dec. 28th, 1917. E. F. Erzinger, W. R. Sanborn; Jan. 23rd. J. M. Black, A. Waterworth, J. Heys, J. J. Meredith; Jan. 25th. J. M. Lintock; Jan. 26th. F. J. Truss, H. Goodwin, F. B. Harland, B. Ingram; Jan. 27th. G. P. Leitch, A. L. Stirk; Jan. 28th. C. Jenkins; Jan. 31st. Capt. G. MacD. Turner, York R. (T.F.), resumes his appointment on relinquishing his special appointment (graded as a Flight Commander); Feb. 1st, seniority from Jan. 22nd, 1916.

Flying Officers (Observers).—2nd Lieut. G. S. Bennett, Notts. and Derby R., S.R., from M.G. Corps; Nov. 28th, 1917, seniority Sept. 7th, 1917. Temp. Capt. C. M. Brisco-Owen, M.C., Gen. List, from a special appointment (graded as a Staff Lieut., 2nd Class); Dec. 7th, 1917, seniority Sept. 18th, 1917. Lieut. W. F. Creery, Conn. Rang., and to be sec'd.; Nov. 25th, 1917, seniority Oct. 25th, 1917. Seniority from Nov. 1st, 1917:—Lieut. W. N. Sherlock, Sea. Highrs.; Dec. 11th, 1917, and to be sec'd. Temp. Lieut. R. C. Williams, M.G. Corps; Dec. 1st, 1917, and to be transfd. to R.F.C. Gen. List. Temp. 2nd Lieut. H. J. Griffiths, S. Wales Bord., and to be transfd. to R.F.C. Gen. List; Dec. 11th, 1917, seniority Nov. 14th, 1917. Temp. Capt. H. Eyden, M.C., R.A., and to be transfd. to R.F.C. Gen. List; Jan. 31st, seniority Nov. 20th, 1917. Lieut. S. Barnes, R.F.A. (T.F.), and to be sec'd.; Jan. 1st, seniority Nov. 22nd, 1917.

Temp. 2nd Lieut. J. M. J. Moore, Res. Regts. of Cav., seniority Nov. 22nd, 1917 and to be transfd. to R.F.C. Gen. List; 2nd Lieut. H. A. Somerville, M.C., R. Suss. K., seniority Nov. 27th, 1917, and to be sec'd.; Jan. 31st.

Balloon Company Commanders.—(Graded as a Sqdn. Comdr.).—Temp. Capt. W. S. Huxley, M.C., Gen. List, from a Balloon Coy. Comdr. (graded as a Flight Comdr.), and to be Temp. Maj. whilst so employed. Graded as a Flight Comdr.: Temp. Lieut. J. A. Stevenson, M.C., Gen. List, from a Balloon Comdr. (graded as a Balloon Officer), and to be Temp. Capt. whilst so employed; Feb. 4th.

Balloon Commander.—(Graded as a Balloon Officer).—Temp. 2nd Lieut. C. W. Berry, Gen. List, from a Balloon Officer, and to be Temp. Lieut. whilst so employed; Sept. 20th, 1917.

Equipment Officers, 1st Class.—From the 2nd Class, and to be Temp. Capt. whilst so employed:—2nd Lieut. (Temp. Lieut.) J. E. R. Avery, S.R.; Lieut. T. L. F. Burnett, S.R.; 2nd Lieut. (Temp. Lieut.) W. T. Curtis, S.R.; Temp. Lieut. W. F. Merritt, Gen. List; Jan. 31st. 2nd Class:—Temp. Hon. Capt. E. D. Maddick, Gen. List, and to be Temp. Hon. Maj. whilst specially employed; Jan. 28th. From the 3rd Class:—2nd Lieut. A. E. Rampton, S.R., and to be Temp. Lieut. whilst so employed; Jan. 1st. Temp. Lieut. H. P. Jenkinson, Gen. List; Jan. 26th. Lieut. A. Champion, S.R.; Lieut. E. B. Horlick, S.R.; and to be Temp. Lieuts. whilst so employed:—Temp. 2nd Lieut. B. F. Wood, Gen. List; 2nd Lieut. P. A. Barron, S.R.; 2nd Lieut. H. Wilson, S.R.; Jan. 31st. Lieut. A. N. Buchanan, S.R., Temp. Lieut. A. McC. Wilson, High. L.I., and to be transfd. to R.F.C. Gen. List; Feb. 1st. 3rd Class:—Capt. C. E. Stewart, R.E. (T.F.); Lieut. R. E. A. Mallet, M.C., Lond. R. (T.F.), and to be sec'd.; Lieut. C. R. Fraser, Canadian Engrs.; Temp. 2nd Lieut. (actg. Lieut.) C. C. Bazell, Training Res., to relinquish his actg. rank and to be transfd. to R.F.C. Gen. List; 2nd Lieut. H. B. Dent, Lond. R. (T.F.), and to be sec'd.; 2nd Lieut. T. T. Murray, Lond. R. (T.F.), and to be sec'd.; Temp. 2nd Lieut. A. E. D. Kinnaird, Lab. Corps, and to be transfd. to R.F.C. Gen. List; Temp. Lieut. Alfred J. Moody, Gen. List; Temp. 2nd Lieut. E. Steadman, Gen. List; Temp. 2nd Lieut. (on prob.) P. H. Paton, Gen. List, and to be confirmed in his rank; Jan. 26th. The name of Temp. 2nd Lieut. K. B. Voss, Gen. List, is as now described, and not as in the Gazette of Jan. 18th.

Examining Officer.—(Graded as an Equipment Officer, 1st Class).—The rank of Temp. Lieut. J. Morris, Gen. List, is as now described, and not as in the Gazette of Feb. 8th.

Schools of Instruction.—Schools of Military Aeronautics.

Assistant Instructor.—(Graded as an Equipment Officer, 2nd Class).—Temp. Lieut. F. Tingle, Gen. List, a Flying Officer (Obs.); Jan. 25th.

Schools of Aerial Fighting.

Chief Instructor.—(Graded as a Sqdn. Comdr.).—Capt. L. P. Aizlewood, M.C., York and Lanc. R. (T.F.), a Flight Comdr., and to be Temp. Maj. whilst so employed; Oct. 19th, 1917.

General List.—Temp. Lieut. W. S. Renwick, attd. S. Wales Bord., is transfd. to R.F.C. Gen. List; Dec. 27th, 1916. Temp. 2nd Lieut. J. L. Dunstan resigns his commission to resume his medical studies, and is granted the hon. rank of 2nd Lieut.; Temp. 2nd Lieut. T. C. K. Moore relinquishes his commission on account of ill-health, and is granted the hon. rank of 2nd Lieut.; Temp. 2nd Lieut. (on prob.) J. Ring relinquishes his commission; Feb. 26th. Temp. 2nd Lieut. R. L. Leigh to take rank and prec. in the corps and in the Army as if his appointment as Temp. 2nd Lieut. bore date Jan. 12th; J. E. Carter to be Temp. 2nd Lieut. (on prob.); Jan. 27th.

Supplementary to Regular Corps.—Lieut. (Temp. Capt.) D. A. C. Symington is placed on the retired list on account of ill-health contracted on active service, and is granted the hon. rank of Capt.; Lieut. A. L. Pattinson relinquishes his commission on account of ill-health, and is granted the hon. rank of Lieut.; 2nd Lieut. T. D. Bucknall relinquishes his commission on account of ill-health, and is granted the hon. rank of 2nd Lieut.; Feb. 26th.

Second Lieutenants (on probation) are confirmed in their rank:—C. W. Duval, H. L. Bayly.

London Gazette Supplement, February 26th.

The following appointments are made:—

Squadron Commander.—Lieut. (Temp. Capt.) G. H. Bowman, M.C., R. War. R., S.R., from a Flight Comdr., and to be Temp. Major whilst so employed; Feb. 3rd.

Flight Commanders.—From Flying Officers: Capt. W. S. F. Johnson, M.C., Yeo., T.F.; Feb. 3rd. Capt. J. M. Tyrrell, R. Ir. Fus., S.R.; Feb. 9th. And to be Temp. Capt. whilst so employed: Lt. H. D. Crompton, S.R.; Temp. 2nd Lieut. C. K. M. Douglas, Gen. List; Feb. 9th.

Flying Officers.—Temp. 2nd Lieut. R. C. P. Rippley, Br. W. Ind. R.; Dec. 29th, 1917. Lieut. G. J. Turner, Manitoba R., Can. Exped. Force; Temp. 2nd Lieut. S. E. Pitts, attd. North'm. R., and to be transfd. to R.F.C., Gen. List; Dec. 30th, 1917. Capt. E. M. Ashton, Suff. R. (T.F.), and to be sec'd.; Dec. 31st, 1917. 2nd Lieut. A. L. Challis, S.R., from an Equip. Officer, 3rd Cl.; Jan. 1st. Lieut. F. D. Hobbs, Household Cav., S.R.; Temp. Lieut. F. H. Cave; Jan. 19th. Lieut. J. A. Gordon, Br. Columbia R., Can. Exped. Force; Jan. 23rd. Temp. 2nd Lieut. H. H. Down, Gen. List, from a Flying Officer (Obs.); Jan. 27th, seniority Jan. 4th, 1917. Temp. 2nd Lieut. I. Macnair, attd. Sco. Rif., and to be transfd. to R.F.C., Gen. List; Jan. 28th. Lieut. J. L. Standish, Alberta R., Can. Exped. Force; Jan. 30th. Temp. Lieut. B. S. B. Thomas, M.C., Welsh R., and to be transfd. to R.F.C., Gen. List; 2nd Lieut. H. F. Young, Lan. Fus. (T.F.), and to be sec'd.; Jan. 31st. Temp. 2nd Lieut. W. S. Dann, attd. E. Kent R., and to be transfd. to R.F.C., Gen. List; Feb. 1st. Temp. 2nd Lieut. C. T. Holt, Gen. List; Feb. 4th. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank: M. R. James, E. A. Magee; Sept. 22nd, 1917. C. M. Holbrook; Nov. 1st, 1917. P. M. Tudhope; Nov. 22nd, 1917. L. A. A. Bernard, R. S. McNair, A. H. Santa Maria; Nov. 27th, 1917. D. Rooksby; Dec. 29th, 1917. J. C. Matthews, J. M. Gibson; Dec. 31st, 1917. M. C. Kinney, P. Hotine; Jan. 1st. P. Nielsen; Jan. 4th. J. S. Southey, A. V. Jones, J. H. T. Davies; Jan. 21st. J. M. E. Murray; Jan. 26th. J. M. McLennan, H. P. Blake; Jan. 27th. W. B. C. Buchanan, A. T. Lotz, E. M. Newman, T. J. Arthur, J. D. Wyatt Smith, C. J. F. Lester, H. J. Hussey; Jan. 28th. R. M. Darney, O. J. F. Jones-Lloyd, W. S. Wheeler, J. P. Van Ryneveld, W. A. Roberts; Jan. 29th. J. H. Calvert, C. H. Dunster, A. Fowler, K. P. Hunt, G. E. B. Lawson, O. H. Nicholson, D. H. Bevan, C. H. Dickens, H. R. Fuhr; Jan. 30th. F. R. S. Southon, E. N. McDonald, C. V. Frith, A. G. Baker, R. G. Tunbridge, J. A. Barnes, R. P. Brailly, F. R. Brand and O. P. Jones; Jan. 31st. W. T. Galbraith; Feb. 3rd.

Assistant Instructors in Gunnery (graded as an Equipment Officer, 2nd Class).—Temp. 2nd Lieut. J. M. McEntegart, Gen. List, from graded as an Equipment Officer, 3rd Cl., and to be Temp. Lieut. whilst so employed; Jan. 24th. Graded as an Equipment Officer, 3rd Class.—Temp. 2nd Lieut. (on prob.) C. E. Hodges, Gen. List, and to be confirmed in his rank; Dec. 27th, 1917.

Balloon Officer.—Temp. 2nd Lieut. H. W. Hewett, R.W. Surr. R., and to be transfd. to R.F.C., Gen. List; Jan. 26th.

Adjutants.—Temp. Major A. N. Stuart, Gen. List, vice Temp. Capt. A. M. Lester, Middx. R.; Jan. 18th. Temp. Lieut. G. A. Williams, Devon R., and to be Temp. Capt. (without the pay or allowances of that rank) whilst so employed, vice Temp. Lieut. (Temp. Capt.) J. G. Howell, M.C., R.A.; Jan. 10th. Lieut. F. A. M. Rawes, R.F.A., S.R., and to be Temp. Capt. (without the pay or allowances of that rank) whilst so employed, vice Lieut. M. Nicholson, R.F.A. (T.F.); June 22nd, 1917. (Substituted for the notification in the Gazette of Sept. 24th, 1917.)

Equipment Officers, 1st Class.—Temp. Lieut. M. G. Dashwood, Gen. List, from the 2nd Cl., and to be Temp. Capt. whilst so employed; Oct. 17th, 1917. Capt. O. I. Preston, Notts and Derby R. (T.F.), from the 2nd Cl.; Dec. 27th, 1917. 2nd Class.—From the 3rd Cl., and to be Temp. Lieuts. whilst so employed: 2nd Lieut. E. E. Moodey, S.R.; Oct. 15th, 1917. Temp. 2nd Lieut. L. E. Yeomans, Gen. List; Oct. 17th, 1917, and Lieut. A. T. Crook, S.R.; Oct. 18th, 1917. Temp. Qr.-Mr. and Hon. Lieut. C. A. E. Lloyd, Gen. List; Feb. 5th. 3rd Class.—The appointments of the following notified in the Gazette of Jan. 21st are cancelled: Lieut. R. H. Johnson, R.F.A. (T.F.), Temp. Lieut. F. A. George, Gen. List.

Schools of Instruction.—Schools of Military Aeronautics.

Assistant Commandant (graded as a Park Commander).—The appointment of Temp. Major W. H. Barff, D.S.O., Ches. R., is as now described, and not as in the Gazette of Jan. 3rd.

Assistant Instructors (graded as Equipment Officers, 2nd Class).—2nd Lieut. (Temp. Lieut.) H. H. Kilby, Lrs., S.R., a Flying Officer (Ob.); Sept. 3rd, 1917. Lieut. R. C. Morgan, Ca. Local Forces, a Flying Officer (Ob.); Sept. 18th, 1917. Lieut. A. F. Tabraham, R.E. (T.F.), a Flying Officer (Ob.); Oct. 19th, 1917. 2nd Lieut. J. C. Cotton, Lond. R. (T.F.), a Flying Officer (Ob.), and to be Temp. Lieut. whilst so employed; Oct. 30th, 1917. Lieut. A. G. C. Dann, N. Lan. R. (T.F.), a Flying Officer (Ob.); Nov. 15th, 1917. 2nd Lieut. (Temp. Lieut.) R. B. Ashcroft, M.C., Notts and Derby R., S.R., a Flying Officer (Ob.); Dec. 18th, 1917. And to be Temp. Lieuts. whilst so employed: Temp. 2nd Lieut. S. T. Hosken, Gen. List, a Flying Officer; Jan. 1st. Temp. 2nd Lieut. W. T. Hawkins, Gen. List, an Equipment Officer, 3rd Cl.; Jan. 24th. Temp. Lieut. S. N. S. Kennedy, Gen. List, a Flying Officer; Jan. 31st.

General List.—Temp. Lieut. G. W. Colmer resigns his commission; Feb. 27th. To be Temp. 2nd Lieuts.: Gnr. J. W. Blagg, from M.G. Corps; Corpl. W. C. Greene, from Arg. and Suthd. Highrs.; Corpl. G. C. Mumford, from H.A.C. (T.F.); Qr.-Mr. Sergt. J. Wood, from Yeo. (T.F.); Dec. 10th, 1917. Corpl. A. Cannon, from K.O. Sco. Bord. (T.F.); Actg. Bombdr. K. Bon, from R.A.; Dec. 11th, 1917. Sergt. C. Unbehau, from M.G. Corps; Sergt. F. A. Whitfield, from M.G. Corps; Gnr. B. E. Turner, from M.M.G. Batt.; Dec. 12th, 1917. Sergt. (Pilot) F. E. Boulton, from R.F.C.; Feb. 11th. To be Temp. 2nd Lieuts. (on prob.): H. de S. Hodson; Nov. 20th, 1917. G. H. Gouinlock, J. A. H. O'Hynes, A. L. Flaws, W. T. Cosgrove, J. R. Charter; Nov. 26th, 1917. E. H. Bramwell, R. E. Bottomley; Dec. 10th, 1917. F. B. Elkins; Jan. 25th.

London Gazette Supplement, February 27th.

The following appointments are made:—

Flight Commander.—Lieut. R. W. G. West, S. Staff. R. (T.F.), from a Flying Officer, and to be Temp. Capt. whilst so employed; Feb. 7th.

Flying Officers.—Lieut. J. M. Ashby, Cent. Ontario R., Can. Exped. Force; Jan. 17th. Temp. 2nd Lieut. R. L. Skinner, attd. R. Highrs., and to be transfd. to R.F.C., Gen. List; Jan. 27th. Temp. 2nd Lieut. R. Dolman, attd. N. Staff. R., and to be transfd. to R.F.C., Gen. List; 2nd Lieut. J. H. Pascoe, D. of Corn. L.L., S.R., and to be sec'd.; 2nd Lieut. J. S. McDonald, Sco. Rif. (T.F.), and to be sec'd.; Jan. 20th. Temp. 2nd Lieut. V. E. Groom, attd. W. York. R., and to be transfd. to R.F.C., Gen. List; Jan. 30th. Temp. Lieut. D. L. Evans, M.C., S. Wales Bord., and to be transfd. to R.F.C., Gen. List; Feb. 6th. From Flying Officers (Obs.): Temp. Lieut. C. A. W. Thompson, Gen. List; Jan. 27th, seniority June 10th, 1916. Temp. Lieut. G. Wilson, Gen. List; Jan. 28th, seniority Feb. 12th, 1917. Temp. 2nd Lieut. L. C. Welford, Gen. List; Jan. 29th, seniority Oct. 11th, 1916. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank: F. W. Hutchings; Feb. 1st. F. W. Knight; Feb. 3rd. C. F. C. Wilson; Feb. 6th.

Assistant Instructors in Gunnery (graded as an Equipment Officer, 3rd Class).—The appointment of 2nd Lieut. (Temp. Lieut.) F. H. L. Varcoe, M.C., Middx. R. (T.F.), is as now described, and not as in Gazette of Nov. 27th, 1917. Temp. Lieut. C. Keith, attd. Glouc. R., and to be transfd. to R.F.C., Gen. List; Dec. 20th, 1917.

Balloon Officers.—Feb. 4th: Lieut. W. R. Cowles, Norf. R. (T.F.), and to be sec'd. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank: N. R. Burroughs, D. Harris, R. T. Freeman, J. S. Hogg.

Supplementary to Regular Corps.—2nd Lieut. A. L. Cockburn to be Lieut.; Jan. 7th.

London Gazette Supplement, February 28th.

The following temporary appointment is made at the War Office:—

Director-General of Military Aeronautics.—Lt.-Col. (Temp. Brig.-Gen.) E. L. Ellington, C.M.G., R.A., from Dep. Dir.-Gen., to retain his temp. rank while so employed, and to remain sec'd.; Jan. 18th.

The following appointments are made:—

Flight Commander.—Lieut. S. E. Faber, S.R., from a Flying Officer, and to be Temp. Capt. whilst so employed; January 1st.

Flying Officers.—2nd Lieut. (on prob.) H. L. Bayly, S.R.; Jan. 25th. Lieut. L. T. Bayes, Lond. R. (T.F.), and to be sec'd.; Jan. 26th. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank:—D. J. Waterous; Nov. 24th, 1917. W. G. Brind; Jan. 12th. E. A. Alton, W. F. Knight, G. B. J. Stoddart; Jan. 25th.

Flying Officers (Observers).—Lieut. T. Weir, Br. Columbia R., Canadian Exped. Force; Sept. 19th, 1917, seniority Aug. 6th, 1917. Temp. 2nd Lieut. L. F. Goodwin, North'n R., seniority Sept. 10th, 1917, and to be transfd. to R.F.C. Gen. List; Feb. 4th. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank:—Seniority Oct. 24th, 1917:—F. D. C. Gaiger, E. G. Henderson; I. MacK. Dempster, seniority Nov. 21st, 1917. Lieut. G. F. Fry, R. Ir. Rif., S.R., and to be sec'd.; Nov. 18th, 1917, seniority Sept. 3rd, 1917. 2nd Lieut. R. Hegan, R. War. R. (T.F.), and to be sec'd.; Feb. 3rd, seniority Oct. 13th, 1917. Lieut. L. C. Spence, M.C., Canadian F.A.; Jan. 31st, seniority Nov. 5th, 1917. Feb. 2nd, seniority Dec. 15th, 1917:—Temp. Lieut. C. Kniveton, M.C., R.A., and to be transfd. to R.F.C. Gen. List; 2nd Lieut. H. W. White, R.A., and to be sec'd.; Temp. 2nd Lieut. A. L. Crow, E. York. R., and to be transfd. to R.F.C. Gen. List. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank:—D. McEachran; Feb. 1st, seniority Oct. 11th, 1917. W. Arthur; Feb. 1st, seniority Nov. 4th, 1917. J. Macnaught; Jan. 31st, seniority Dec. 12th, 1917. W. L. Gopsill; Feb. 2nd, seniority Dec. 7th, 1917. Lieut. D. D. Richardson, E. Sur. R., S.R., seniority Nov. 12th, 1917. Lieut. H. C. R. Milward, R.F.A. (T.F.), seniority Nov. 21st, 1917, and to be sec'd.; Feb. 1st. Seniority Nov. 27th, 1917:—Lieut. H. E. Pohlmann, W. Rid. R. (T.F.), and to be sec'd.; Temp. 2nd Lieut. J. Johnson, W. York. R., and to be transfd. to R.F.C. Gen. List; Lieut. E. V. Gilliat, W. York. R., S.R., and to be sec'd.; Feb. 3rd, seniority Nov. 20th, 1917. Temp. 2nd Lieut. F. B. Ford, K.R.C., and to be transfd. to R.F.C. Gen. List; Jan. 29th, seniority Nov. 4th, 1917. 2nd Lieut. (actg. Lieut.) L. B. Nicholls, A.S.C., to be sec'd., and to relinquish his actg. rank; Nov. 29th, 1917, seniority Nov. 7th, 1917.

Seniority Nov. 11th, 1917:—Lieut. J. H. Haughan, Bord. R. (T.F.), and to be sec'd.; Jan. 12th. Temp. Lieut. B. Burton, W. York. R., and to be transfd. to R.F.C. Gen. List; Jan. 17th. 2nd Lieut. A. F. Wood, R.A., and to be sec'd.; Feb. 1st, seniority Nov. 13th, 1917. Temp. Lieut. C. W. Reid, S. Afr. Inf.; Nov. 18th, 1917, seniority Nov. 16th, 1917. Temp. 2nd Lieut. T. M. Evans, R.E.; Dec. 24th, 1917, seniority Nov. 29th, 1917. 2nd Lieut. H. R. Donovan, R.A., and to be sec'd.; Dec. 25th, 1917, seniority Nov. 30th, 1917. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank:—R. Kearton; Jan. 28th, seniority Sept. 17th, 1917. F. P. Bellingham; Jan. 29th, seniority Nov. 12th, 1917. C. A. Brook; Feb. 1st, seniority Nov. 13th, 1917. W. Haddow; Jan. 28th, seniority Nov. 14th, 1917. J. C. Sherwin; Jan. 1st, seniority Nov. 27th, 1917. G. L. Pollard; Jan. 26th, seniority Dec. 5th, 1917.

Balloon Company Commander.—(Graded as a Flight Comdr.), Temp. Capt. J. K. T. Glen, High. L.I. (T.F.), from a Balloon Comdr. (graded as a Balloon Officer); Feb. 16th.

Equipment Officers, 3rd Class.—2nd Lieut. C. W. Duval, S.R.; Nov. 23rd, 1917. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank:—H. J. Macready; Jan. 7th. F. C. North; Jan. 14th.

General List.—F. L. G. Ghisi to be Temp. 2nd Lieut. (on prob.); Jan. 25th.

London Gazette Supplement, March 1st.

The following appointments are made:—

Squadron Commanders.—From Flight Comdrs., and to be Temp. Majors, whilst so employed:—Lieut. (Temp. Capt.) E. A. B. Rice, M.C., S.R.; Jan. 1st. Lieut. (Temp. Capt.) K. L. Caldwell, M.C., S.R.; Jan. 15th.

Flight Commanders.—From Flying Officers:—Temp. Capt. J. M. Heap, Gen. List; Capt. A. E. Davis, Suff. R. (T.F.); Capt. R. E. Cuff, N. Lan. R., S.R.; Temp. Capt. C. L. E. Geach, Gen. List; Jan. 1st. Capt. H. T. F. Russell, R. Welsh Fus. (T.F.); Feb. 13th. And to be Temp. Capt. whilst so employed: Temp. Lieut. F. J. Martin, Gen. List; Temp. Lieut. D. B. Calderwood, Gen. List; Lieut. H. M. T. Lehmann, M.C., Essex R.; Lieut. W. McKay, Sea. Highrs.; Lieut. W. Helmore, R.A.; Lieut. R. H. Timmis, S.R.; Temp. Lieut. J. S. Williams, M.C., Gen. List; 2nd Lieut. (Temp. Lieut.) N. W. Wadham, Rif. Brig.; Temp. Lieut. G. S. Murray, Gen. List; Lieut. A. C. Ferguson, S.R.; Lieut. R. W. Buswell, Yeo. (T.F.); Lieut. J. A. G. Gilray, S.R.; 2nd Lieut. O. W. Morgan, R.F.A., S.R. (since killed); 2nd Lieut. C. H. Stokes, S.R.; Temp. Lieut. G. F. Lines, M.C., Gen. List; Temp. Lieut. R. B. Corfield, Gen. List; Jan. 1st. 2nd Lieut. A. R. Churchman, Yeo. (T.F.); Feb. 7th. Lieut. T. Owen, S. Staff. R.; Feb. 8th. Lieut. R. A. Grosvenor, D. Gds.; Feb. 9th. Lieut. H. MacKenzie, R. Lanc. R., S.R.; Temp. 2nd Lieut. H. P. Lale, Gen. List; Temp. 2nd Lieut. H. R. Child, Gen. List; Feb. 10th. Temp. 2nd Lieut. D. H. Oliver, Gen. List; Temp. 2nd Lieut. H. R. Sayers, Gen. List; Feb. 12th. 2nd Lieut. H. A. Hamersley, S.R. (Capt., Commonwealth Mil. Forces); Temp. 2nd Lieut. G. B. Moore, Gen. List; Feb. 14th.

Flying Officers.—Temp. Lieut. E. C. Cockburn, R.E.; Dec. 19th, 1917. Lieut. A. F. Evans, R. Welsh Fus. (T.F.), and to be sec'd.; Jan. 29th. From Flying Officers (Obs.):—Lieut. J. H. Halliwell, L'pool R. (T.F.), seniority from Feb. 12th, 1917. 2nd Lieut. F. H. Baguley, S.R., seniority from Feb. 25th, 1917. Temp. Lieut. L. C. Tyson, Gen. List; Jan. 30th, seniority from Jan. 28th, 1917. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank:—A. Ginger; Oct. 28th, 1917. N. A. C. Williams, R. V. Jameson; Dec. 19th, 1917. G. C. Young; Jan. 30th. M. F. Sutton, G. D. Wilson, C. W. Payton; Feb. 4th. M. Hyslop; Feb. 5th. The appointments of the following Temp. 2nd Lieuts., Gen. List, notified in the Gazette of Jan. 14th, are antedated as follows:—S. T. Stephens to Sept. 22nd, 1917; W. H. Taylor to Oct. 13th, 1917.

Adjutants.—Temp. 2nd Lieut. (Temp. Lieut.) P. C. Hoyland, R.W. Kent R., is transfd. to R.F.C., Gen. List, and to be Temp. Capt. (without the pay or allowances of that rank) whilst so employed; Jan. 24th.

Park Commander.—Temp. Capt. R. G. L. Candy, Gen. List, from an Equipment Officer, 1st Class, and to be Temp. Maj. whilst so employed; Jan. 29th.

Equipment Officers, 1st Class.—Lieut. (Temp. Capt.) S. W. Clift, R.G.A. (T.F.), from Adjnt., R.G.A., and to retain his temp. rank whilst so employed; Jan. 8th. 2nd Class.—2nd Lieut. N. L. Godber, S.R., from the 3rd Class, and to be Temp. Lieut. whilst so employed; Jan. 15th.

Experimental Officer, 2nd Class (Graded as an Equipment Officer, 2nd Class).—2nd Lieut. W. W. Hammond, S.R., from an Equipment Officer, 3rd Class, and to be Temp. Lieut. whilst so employed; Feb. 1st.

General List.—Temp. Maj. A. M. Thom relinquishes his commission on account of ill-health contracted on active service, and is granted the hon. rank of Major; Temp. 2nd Lieut. W. C. K. Dewar relinquishes his commission on account of ill-health, and is granted the hon. rank of 2nd Lieut.; Temp. 2nd Lieut. W. C. Faulk resigns his commission to resume his medical studies, and is granted the hon. rank of 2nd Lieut.; March 2nd.

The following from R.F.C., to be Temp. 2nd Lieuts.:—1st Class Air Mech. W. S. Featherstonhaugh; Oct. 23rd, 1917. Temp. Sgt.-Maj. B. Thelenberg; Feb. 3rd. Temp. Sgt.-Maj. C. Armand; Feb. 4th. Sgt. (Pilot) W. F. Parke; Feb. 18th. J. B. Norton, late 2nd Lieut. W. York. R., S.R., to be Temp. 2nd Lieut.; Nov. 11th, 1917. Cadets to be Temp. 2nd Lieuts. (on prob.):—B. W. Berrington, W. L. Brookes, L. G. Cartwright, A. C. Challans, G. Smith, R. W. Willis, C. L. Wilson, R. F. Winder; Feb. 10th. P. Alderton, J. R. Ashmore, G. A. Beith, H. N. Bennett, M. Bennie, W. E. Blake, S. D. Blanchard, L. S. Bowker, H. T. Brookes, J. L. Bullard, C. N. S. Burns, H. C. Chaplin, A. K. Charlesworth, E. R. F. Cole, H. A. P. Coleman, C. C. Cornett, D. E. Court, A. Cowan, J. J. Cryan, A. N. Dale, E. K. Dashwood, T. A. Davidson, J. E. de Casmaker, W. A. Down, S. F. Dudley-Smith, G. R. Dunworth, W. D. Durran, P. Easter, A. R. Ellwood, L. J. Emerton, C. F. D. Everington, J. Franklin, L. M. Frederick, G. H. Gleadon, G. Hall, H. T. Hayes, E. A. Hearne, J. F. Heydenrych, C. B. Hicks, W. C. Hield, S. J. Hill, L. Hollingsworth, A. L. Hopson, R. F. Houston, L. G. W. Howles, D. B. Hughes, J. A. Humphrey, J. Hyde, A. C. T. Isaac, H. T. J. Jagger, S. G. Jary, G. Jennings, R. W. Johnson, S. D. E. Johnson, G. J. Joint, W. J. Jowett, L. P. Kelly, C. W. Kerr, V. O. Knowles, O. Lane, A. F. Lawry, G. F. Layne, W. A. Linnell, G. T. Litherland, W. S. Logsdon, J. J. Luckley, J. A. MacDonald, R. R. Macdonald, N. C. Mackey, R. L. MacLeod, J. Magill, A. J. F. Maltby, J. N. Marchbank, J. H. Marland, G. Marriott, J. A. Martin, H. Mason, E. I. Mayne, H. T. McKinnie, S. McLeod, L. M. Miller, B. H. Moore, A. C. Muirhead, R. G. Mullette, H. A. Murton, G. A. R. Muschamp, M. A. Naish, W. Narburgh, E. G. Nicholls-Pratt, H. I. Nicholl, O. J. Noonan, H. J. Oram, W. H. L. Oxland, O. S. Parker, F. T. Parr, J. K. Pickard, J. P. Pickford, T. S. Platten, A. B. Porter, W. J. Potts, M. F. Poulter, F. D. Pratt, M. E. Preston, H. C. Print, H. Proudlove, F. W. Radford, L. Ramsden, W. C. Rankin, F. G. L. Robinson, D. G. Rogers, H. A. Rootham, J. S. Ross, R. M. Ross, J. R. Koulston, B. S. Rourke, F. S. Ruddle, P. Rushworth, A. N. Ryles, J. Sayner, A. C. Scheffeld, H. Sharkey, E. A. Shearing, R. F. Sheldrake, F. W. Sinclair, A. E. H. Sinclair, L. J. Simmons, W. C. E. Skelton, W. H. Smallwood, H. H. Smith, W. Smith, J. F. C. Smith, W. Spriggs, W. G. Stephens, A. Swindale, H. E. Talbot, T. Temple, C. Thomas, R. R. Thomson, S. A. Thomson, W. B. Thomson, O. Voelker, H. W. Lou, P. J. Waller, R. N. Webster, A. H. Williams, A. Winpenny, G. H. Woodland, F. Young; Feb. 21st. H. F. Allbutt, R. G. Adams, A. Arnott, F. Austin, N. H. Bain, D. S. Barbour, G. M. E. Bennett, F. Binns, A. Birrell, W. F. Blackman, R. E. Bolton, F. Boyer, A. Brandrick, A. E. Brealey, R. A. Broadbank, C. T. Brown, F. A. Browning, P. M. Burgess, H. S. R. Burt, R. P. Cobb, W. F. C. Cooper, A. C. Cash, H. J. Challis, M. N. Cloete, G. O. Cole, W. H. Cole, J. R. Dean, M. Dean, T. G. C. De Vall, I. L. Dutton, A. D. M. Edwards, H. S. Ellis, S. W. W. Field, W. J. C. Finlayson, P. J. A. Fleming, S. J. Fortescue, C. O. Frost, C. S. Frost, K. C. W. Garden

J. R. Gaze, W. H. C. Gillett, R. S. Gilbert, S. Gilchrist, A. E. Gillespie, A. J. Goring, W. Goffe, R. Goodburn, H. Goodier, A. V. Green, A. D. Greenhough, E. F. D. Gregory, H. G. Harper, A. M. Haybittle, V. O. Hazeldine, A. Hemingway, C. C. M. Hilditch, C. S. Hill, T. B. Howard, A. E. Hunt, R. C. Jack, W. E. Jaggs, J. J. Jones, J. W. Jameson, C. Kay, J. E. Kemp, P. King, F. G. Kitson, F. K. Langton, E. C. Latta, F. W. Long, A. Mackinnon, J. Mackintosh, C. McIntyre, D. Macbeth, D. F. MacKenzie, R. H. Malt, C. C. L. Marionni, R. H. McLean, R. Morris, C. Nash, G. S. Nettleton, G. D. Nokes, G. Norris, E. A. Parnell, A. Phipps, F. Reeday, J. Roberts, E. B. Roughley, W. T. Randles, I. J. Sankey, S. A. Saunders, E. A. Scanes, R. Sharples, A. J. Snetsinger, R. P. Squire, G. E. Stede, F. T. Stott, G. A. Treadgold, F. F. Tattum, C. D. Thornton, S. Thomas, A. Thomson, K. B. Thomas, E. A. C. Watts, J. G. Webster, H. B. Williams, W. D. Williams, H. F. Workman, W. J. Heyland, W. Musson, F. J. S. Clayton; Feb. 23rd.

Memorandum.—Temp. Sgt.-Maj. H. Parker, from R.F.C., to be 2nd Lieut. while serving with R.F.C.; Feb. 3rd.

General List (R.F.C.).—Cdt. A. P. Snelling to be Temp. 2nd Lieut.: Aug. 30th, 1917. (Substituted for Gazette notification Sept. 18th, 1917, page 9710, describing surname as Smelling).

London Gazette Supplement, March 2nd.

General List.—Cadets to be Temp. 2nd Lieuts. (on prob.):—F. F. Archer, J. Armstrong, G. M. Ashwell, C. R. G. Abrahams, J. G. Andrews, R. A. H. Brittain, F. A. Bird, A. N. Berry, L. S. H. Bartlett, W. E. Cook, N. F. Cooke, P. G. Child, B. Champion, J. R. Chisman, H. Entwistle, F. Farmer, P. R. Firth, C. B. Foster, W. E. Gemmell, H. C. R. Grant, A. L. Horrell, A. N. Hyde, C. A. Henshaw, C. Houlgrave, C. E. Hodgkinson, G. T. Johnston-Smith, P. J. R. King, J. B. Lacy, G. Lindsay, J. Newhill, A. V. Redwood, J. A. Robertson, G. T. Richardson, T. K. Russell, H. J. B. Sullivan, J. H. Stringfellow, E. A. O. Simpson, M. Thornton, J. S. Wheatcroft, F. C. Whitten, W. J. Weir, C. W. Warwick; Feb. 24th.

Supplementary to Regular Corps.—Lieut. K. W. P. Hindley relinquishes his commission on account of ill-health, and is granted the hon. rank of Lieut. Lieut. R. H. Norton-Dawson is placed on the retired list on account of ill-health contracted on active service; March 3rd.

London Gazette Supplement, March 4th.

The following appointments are made:—

Flying Officers.—Temp. 2nd Lieut. (on prob.) J. D. Read, Gen. List, and to be confirmed in his rank: Dec. 20th, 1917.

General List.—Gnr. K. M. Moseley, from M.G. Corps, to be Temp. 2nd Lieut., Dec. 9th, 1917. To be Temp. 2nd Lieuts. (on prob.):—G. E. Johnson; Dec. 21st, 1917. M. Arias, A. R. Bolay, H. A. Boyle, H. J. Bowen, W. B. Craib, M. J. Carroll, E. A. Chaplin, S. C. Conner, C. K. Crocker, K. De Pass, R. D. Doane, R. W. Duff, M. Genest, M. L. Green, M. S. Gregory, J. L. Hill, G. S. Jones-Evans, C. A. Koch, D. P. Laird, W. G. Lance, J. M. Larose, L. McL. Lord, W. C. Lynch, F. L. McArthur; Dec. 30th, 1917. C. H. Bunn, J. A. F. Burwash, F. J. Delamain, C. E. Kelly, A. E. Parsons, W. S. MacDonald; Dec. 31st,

1917. R. M. Cummings; Jan. 1st. W. E. Coventry; Jan. 4th. W. A. Anderson, W. Breckenridge, O. H. Campbell, C. E. Forman, W. J. Gleason, B. B. Halleck, I. V. Lawrence, F. L. Le Lievre, D. C. Mangan, T. C. Martin, C. A. Manzetti, H. J. Morin, C. M. Moore, R. J. Morgan, J. A. Mitchell, J. H. McGregor, W. W. McGill, J. S. Clark, E. Cummings, J. T. Davidson, R. Dinwiddie, F. Edsted, J. V. Flanagan, E. H. Mulley, M. Munden, C. D. Nadeau, G. W. Northridge, H. B. Oldham, G. T. Olmstead, F. C. Pacey, H. M. S. Parsons, J. D. Paterson, T. B. Randall, E. Robbins, B. Rogers, O. Rose, G. W. Schermerhorn, E. Shapard, W. E. Sinclair, A. T. Simons, R. R. Spafford, C. A. Sperry, E. C. Spicer, R. H. Staines, J. K. Stewart, G. F. Thompson, C. M. Wilson, C. R. Wrede, A. T. Wyman, H. L. Yates; Jan. 5th. J. S. Abel, T. B. Bradley, H. W. Le Blond, E. A. Cook, C. F. David, J. B. Fitzgerald, S. Hoffman, C. F. Kelsch, C. P. Macklin, C. A. Mitchell, A. L. McKay, J. W. Mackenzie, F. W. Plaxton, W. A. Pomeroy, F. M. Ruggles, W. C. Simon, E. C. Slaght, J. D. Smith, G. A. Sweet, G. F. Townsend, A. W. Young; Jan. 7th. E. A. Dixon, R. W. Hathaway; Jan. 10th. Flight Sgt. A. J. Adams, from R.F.C., Actg. Staff Sgt. E. G. Anness, from R.E. (T.F.), Pte. R. Q. Bamber, from Lond. R. (T.F.), 2nd Class Air Mech. J. L. Baring, from R.F.C., 2nd Class Air Mech. B. H. Bayliss, from R.F.C., 2nd Class Air Mech. J. G. Beevers, from R.F.C., Sgt. W. G. T. Blois, from R.F.C., Pte. W. H. Bull, from Yeo. (T.F.), Actg. Cpl. W. L. Clark, from H.S. Empl. Co., Sgt. J. J. Clennel, from Midd'x R. S.R., 3rd Class Air Mech. (actg. Cpl.) F. Cohen, from R.F.C., St. E. I. T. Duffield, from Midd'x R. S.R., 1st Class Air Mech. S. S. Dungey, from R.F.C., Cpl. A. D. Edwards, from R.F.C., Pte. McD. Goodall, from A.S.C., Spr. E. B. Gray, from R.E. (T.F.), Sgt. A. Isles, from R.F.C., QrMr.-Sgt. R. W. Johnson, from Res. R. of Cav. Batt. Sgt.-Maj. W. H. O. Jones, from H.A.C. (T.F.), 2nd Class Air Mech. W. J. King, from R.F.C., Cpl. A. Laurie, from R.F.C., 3rd Class Air Mech. T. L. Lewis, from R.F.C.; Co. Sgt.-Maj. W. H. Lowther, from Arg. and Suth'd Highrs., S.R., Pte. C. E. D. Mansden, from Inns of Court O.T.C., Pte. P. H. Matthews, from A.S.C., Pte. E. Morton, from Training Res., and Class Air Mech. F. W. Osborne, from R.F.C., Co. Sgt.-Maj. H. A. Paton, from Lond. R. (T.F.), Co. Sgt.-Maj. S. A. Read, from Leic. R., QrMr.-Sgt. H. Reynolds, from North'n R. (T.F.), Pte. H. S. Rogers, from A.P. Corps, 2nd Class Air Mech. G. W. Sturman, from R.F.C., Lt.-Cpl. O. E. C. Taylor, from Hamps. R., QrMr.-Sgt. H. J. Thomas, from Dorset R., 3rd Class Air Mech. E. J. Tibbatts, from R.F.C., Cpl. G. F. Tidbury, from R.F.C., Pte. W. Thomson, from A.S.C., Pte. A. G. Turner, from Res. Reg. of Cav., Sgt. E. H. Wall, from A.S.C., Bombr. T. Walker, from R.F.A. (T.F.), Flight-Sgt. A. Walters, from R.F.C., 2nd Class Air Mech. H. Wearing, from R.F.C., Sgt. F. C. Weatherley, from R.F.C., 2nd Class Air Mech. E. T. F. Welburn, from R.F.C., 2nd Class Air Mech. J. A. Whitehead, from R.F.C., 2nd Class Air Mech. H. S. Whitley, from R.F.C.; Feb. 5th. Actg. Flight Sgt. E. T. Fountain from R.F.C.; Feb. 18th.

Aeronautical Inspection Department.

London Gazette Supplement, February 28th.

W. A. H. M. P. Beatty to be Temp. Hon. Lieut. whilst employed as Asst. Insp. Aeronautical Inspection Department; Dec. 20th, 1917.

AIRCRAFT WORK AT THE FRONT.

OFFICIAL INFORMATION.

Admiralty, February 18th.
"Naval aircraft carried out a bomb raid on Uytkerke aerodrome at about noon on the 17th. Many bombs were dropped on the objective. One enemy aircraft was shot down out of control. All our machines returned safely."

British.
Admiralty, February 19th.
"During the night of February 17th-18th naval aircraft carried out bombing raids on Zebrugge mole and docks, and on docks at Bruges. Several tons of explosives were dropped. Bombs were observed to fall alongside a submarine shelter and in the vicinity of lock gates and quays. During the forenoon of February 18th the enemy aerodrome at Varsenaere was attacked. Several direct hits are reported on hangars and sheds. During the course of offensive patrols three enemy aircraft have been destroyed. All our machines have returned safely."

"On the night of February 18th bombing raids were carried out by naval aircraft on St. Denis Westrem and Bruges docks. Many tons of explosives were dropped. A hostile scout which attacked one of our machines was driven down. To-day (February 19th) a raid was made on Aertrycke aerodrome and Engel dump. Large quantities of explosives were dropped with good results. During the course of offensive patrols a hostile seaplane was shot down and fell in flames into the sea, a scout was brought down on our side of the line, and another machine driven down out of control. All our machines returned safely."

General Headquarters, February 19th.
"On the 18th inst. the weather was very fine, but visibility was not so good as on preceding days. This did not prevent our aeroplanes from carrying out much useful work in conjunction with the artillery, and taking many photographs in the enemy's forward and back areas. A hostile aerodrome north of Douai, a large ammunition dump near Courtrai, a railway station south-east of Douai, and the enemy's billets on various parts of the front were bombed by us during the day. Continuous fighting took place, resulting in 11 hostile machines being brought down and six others driven down out of control. Two of our aeroplanes are missing. At night a thick mist set in, but our machines, nevertheless, succeeded in making several short trips behind the enemy's lines, and dropped bombs on hostile billets and railway stations."

"Following on the successful daylight raids on the 18th inst. against Treves and Thionville, our night-flying squadrons went out after dark and again attacked these towns from a low height with equally good results. Five bursts were observed on Treves station, which broke into flames. Three other buildings were alight when our machines left. In the second raid on Thionville, bursts were seen on the railway and in the gasworks. A large fire was started which was visible to the pilots attacking Treves. German aircraft and anti-aircraft guns were very active during both raids. One of our machines failed to return."

"On the 19th inst. another raid in broad daylight, making the third within 36 hours, was carried out by us against Treves. On this occasion well over a ton of bombs were dropped on the objective. Eleven bursts were observed on the railway station and six on buildings in close proximity to it. Three good fires were started. Our machines were repeatedly attacked by hostile scouts, which were driven off. Anti-aircraft gun fire also was considerable. One of our machines is so far unaccounted for."

General Headquarters, February 20th.
"The fine weather of the last few days continued on the 19th inst. Visibility, however, was not good, and prevented much work being done by our aeroplanes with the artillery. In did not interfere with photography, and many photographs were taken of the enemy's aerodromes and other important objectives. A hostile aerodrome north of Douai and a large ammunition dump north-east of Lille were heavily bombed by us during the day, and, in addition, 50 bombs were dropped on the enemy's billets. In air fighting 11 hostile machines were brought down, and one other was driven down out of control. A German night bombing machine also was brought down in No Man's Land by our infantry. Two of our aeroplanes are missing. At night visibility remained bad, the greater part of the front being enveloped in thick mist. Over 150 bombs were dropped

by us, however, on an important hostile railway centre south-east of Cambrai and on billets north of Douai.

On the night of the 19th-20th inst. Thionville was again successfully attacked by our machines. Twenty-six heavy bombs were dropped on the railway station. All bombs were seen to explode on and around the objective, and a large explosion was caused and two fires started. The enemy's anti-aircraft gunfire was again considerable, but all our machines returned safely. On the 20th inst. our aeroplanes bombed the large factories and the station at Pirmasens in Germany. A ton of bombs was dropped, and hits were obtained near the station, the gasworks, and the factories, where a large fire was started. All our machines returned."

War Office, February 21st.
"Palestine.—Co-operating with this advance (N.W. of Jerusalem) our air service carried out effective bombing attacks against the enemy camps and depots on the left (east) bank of the Jordan about Shunet Nimrin (10½ miles east-north-east of Jericho)."

General Headquarters, February 21st.
"On the 20th inst. the recent spell of fine weather broke. With the exception of a few flights, carried out by our machines to give observation for the artillery, no flying was done."

War Office, February 22nd.
"Italian Front.—During the past week some successful raids have been carried out across the River Piave and prisoners captured. Successful counter-battery work has been carried out daily. Our aeroplanes have carried out several successful bombing raids and destroyed an enemy dirigible shed. The enemy continues to bomb back areas and towns when weather at night permits. Two of his machines have been destroyed recently in returning. Since the British force arrived our Flying Corps have destroyed 58 hostile machines, principally German, while we have lost only eight. Many other hostile machines have been driven down out of control."

"Salonica.—Our aircraft co-operated by bombing gun emplacements and trenches. There has been a heavy fall of snow."

General Headquarters, February 22nd.
"The weather improved on the 21st inst., and our aeroplanes were able to accomplish a full day's work in the air. Many successful reconnaissances, in the course of which photographs were taken, were carried out. The usual work in conjunction with the artillery continued all day, good visibility enabling excellent results to be obtained. Over 300 bombs were dropped by us on the enemy's billets and on railway sidings at Courtrai, Ledeghem, and south-east of Douai. In air fighting, seven hostile machines were brought down and two others driven down out of control. Three of our machines are missing."

"During the night of the 21st-22nd inst., our aeroplanes dropped a total of 678 bombs on various targets. Three hundred bombs were dropped on an aerodrome south-east of Le Cateau used by the enemy's night bombing squadrons. Nineteen direct hits were observed on hangars. The remaining bombs were dropped on hostile aerodromes in the neighbourhood of Ghent and Tournai, and on billets. One of our machines failed to return."

General Headquarters, February 23rd.
"On the 22nd inst., with the exception of a few flights in co-operation with the artillery, no work in the air was possible owing to bad weather."

General Headquarters, February 24th.
"On the 23rd inst. bad weather again prevented much flying being done. A little observation work was carried out by our aeroplanes in co-operation with the artillery, and some bombs were dropped in the enemy's forward areas. During the night, 23rd-24th inst., bombs were dropped by us on three hostile aerodromes in the valley of the River Lys. All our machines returned."

General Headquarters, February 25th.
"On the 24th inst., in spite of bad weather, our aeroplanes carried out one or two reconnaissances and observed for the artillery. Bombs were dropped

by us on various targets, including hostile billets, transport, and working parties. Two of our machines are missing. After dark, our night-flying squadrons dropped over 200 bombs on hostile aerodromes near Courtrai and on billets north-east of St. Quentin. All our machines returned."

General Headquarters, February 26th.

"On the 25th inst., low clouds and a very strong wind prevented work in the air during the day. After dark, the sky cleared, though a very strong westerly wind continued. Our night bombing squadrons displayed great activity, dropping a total of over 1,200 bombs in the course of the night. The targets chiefly attacked were the aerodromes south of Ghent and west of Tournai used by the enemy's night-flying machines, and other aerodromes in the neighbourhood of Courtrai. Hostile billets round Douai and east of St. Quentin were also heavily bombed, over 350 bombs being dropped in the latter area. All our machines returned."

General Headquarters, February 27th.

"On the 26th inst., the weather was fine, but a very strong west wind greatly favoured the enemy's machines in air fighting. Our aeroplanes carried out several long-distance reconnaissances and took many photographs of hostile aerodromes and railway communications in the enemy's back areas, in addition to photographs of his trench lines. Our machines working with our artillery were busy all day, and good visibility enabled good results to be obtained. Four tons of bombs were dropped by us on the large railway sidings at Courtrai, the railway junction, midway between Douai and Valenciennes, two hostile aerodromes north of Douai, and billets. Fighting in the air was severe, and many combats took place between the enemy's scouts and our reconnaissance, bombing and fighting machines. One hostile aeroplane was forced to land behind our lines by one of our scouts. Twelve other German machines were brought down, and one was driven down out of control. Another hostile machine was brought down by our anti-aircraft gun-fire. Eight of our machines are missing."

"During the night of the 26th-27th inst. over half a ton of bombs were dropped by us on barracks and railway stations at Trèves, four bursts being observed on furnaces in the gas works and eight in the railway station. On the same night nearly one and a-half tons of bombs were dropped on a hostile aerodrome near Metz, good bursts being observed in the hangars and hutments. One hostile machine was encountered close to the aerodrome and brought down. All our machines returned safely, though fire from anti-aircraft guns and machine guns was considerable."

Admiralty, February 27th.

"During the night of 25th-26th bombing raids by naval aircraft were carried out on Oostacker Aerodrome and Bruges Dock. Many tons of bombs were dropped over objectives with good results. Two further raids were made yesterday, one on Engel dump, where a fire was started, and the second on Abeele Aerodrome. All our machines returned safely."

War Office, February 27th.

"Palestine Front.—On February 25th successful bombing raids were executed by our air service against El Kerak and El Ketrani railway station."

General Headquarters, February 28th.

"A certain amount of artillery work was accomplished with aeroplane observation during the morning of February 27th, when the weather was fine. Our machines carried out a few reconnaissances, and bombs were dropped by us on a railway station east of Lille and on other miscellaneous targets behind the enemy's lines. In the little fighting which took place, one hostile machine was brought down. None of our machines are missing."

War Office, February 28th.

"Mesopotamia.—Our aeroplanes have attacked camps and billets near Hit and also on the upper Dialah."

General Headquarters, March 1st.

"Our aeroplanes took advantage of the few fine intervals on February 28th to carry out work in conjunction with the artillery and also to drop bombs on two of the enemy's ammunition dumps south of Lille, as well as on railway sidings at Courtrai and Deynze (south-west of Ghent). One of our machines is missing. After dark our machines again took the air in the intervals between the hailstorms. Four tons of bombs were dropped on a large hostile aerodrome midway between Tournai and Mons, and on billets in the neighbourhood of Douai. All our machines returned."

General Headquarters, March 2nd.

"There was a very strong wind on the 1st inst., with rain most of the day. Our aeroplanes, nevertheless, made a few flights in co-operation with the artillery, and carried out some reconnaissances. Over 200 bombs were dropped on various objectives, and many rounds were fired from the air at ground targets. Two hostile machines were brought down by anti-aircraft gun fire and two others were driven down out of control by our aeroplanes. One of our machines is missing."

Admiralty, March 3rd.

"A bombing raid was successfully carried out to-day by naval aircraft on the seaplane sheds at Ostend. A number of bombs were dropped from 150 ft. to 300 ft., and were observed to reach objectives. Three direct hits were also obtained on an anti-aircraft battery in the vicinity. All our machines returned safely."

War Office, March 4th.

"Palestine Front.—An enemy aeroplane was brought down within our lines near Rantieh (10 miles east of Jaffa). Both pilot and observer were wounded and captured."

French.

"During the 17th two German aeroplanes were brought down by the fire of our special guns. During the same day and during the following night our bombing aeroplanes made various raids against the railway stations of Thiaucourt, Thionville, Metz-Sablons, Pargny sur Moselle. The enemy establishments of Hirson and various aviation grounds received numerous bombs. A total of 13,000 kilogrammes of explosives was dropped and caused several fires and explosions in the bombed buildings."

Paris, February 19th.

"During the days of February 16th, 17th and 18th our pilots brought down, or seriously damaged, in the course of numerous flights, 18 German machines. In addition an enemy captive balloon was burnt. During the day of February 16th and the following night our bombing squadrons dropped 16,000 kilograms of explosives on enemy objectives, notably the railway stations of Metz-Sablons, Forbach and Bendorf, and the depôts at Enssheim, where a big fire broke out, as well as on different aerodromes."

Paris, February 20th.

"On the 19th four German aeroplanes were brought down by our pilots. A fifth machine was destroyed by our anti-aircraft guns. Three other enemy aeroplanes fell in their own lines, badly damaged, after air fights."

Paris, February 21st.

"On the 20th our pilots brought down three German aeroplanes and forced two other machines to descend in their own lines in a seriously damaged condition. An enemy captive balloon was set on fire."

Paris, February 23rd.

"During the period from February 11th to February 20th, 16 German aeroplanes and two captive balloons were destroyed by our battle-pilots. Four other aeroplanes were brought down by the fire of our anti-aircraft guns during the same period, in addition to 21 enemy machines seriously damaged in air fights which fell behind their lines."

Paris, February 24th.

"A captive balloon was brought down by our artillery. Our troops returned to their lines after having inflicted some losses on the enemy and brought back some 15 prisoners and a machine-gun."

Paris, February 25th.

"Salonica.—Allied airmen bombed enemy establishments in the Vardar Valley and east of the Struma."

Paris, February 27th.

"Enemy aeroplanes bombarded Nancy last night. Two persons killed and 11 wounded have been reported. During the day of the 26th three German aeroplanes were brought down by our pilots. Our bombing squadrons dropped 4,500 kilos. of explosives, particularly on the stations of Metz-Sablons and Warmeriville."

Paris, February 28th.

"Salonica.—Stations on the Seres-Drama railway were bombarded by airmen."

Paris, March 1st.

"Yesterday one of our crews carried out a photographic reconnaissance as far as Mariembourg, 50 miles behind the lines."

Belgian.

Havre, February 28th.

"On February 21st Adjutant Demeulemeester brought down his seventh hostile aeroplane, which fell in flames between Tervaele and Dixmude."

Italian.

Rome, February 19th.

"In the course of an air combat one of our airmen shot down an enemy machine near Pederobba. During the early hours of last night, hostile aeroplanes dropped bombs on various inhabited localities in the Plains; at Vicenza, where four bombs exploded, we have to lament a few victims. The damages are slight."

Rome, February 20th.

"During the day the aerial activity was noticeable on both sides along the front lines. At dawn a squadron of British machines surprised the aviation ground of Casarsa, and dropped bombs on it, with very good effects. An airship shed was destroyed. Early in the night one of our flights reached the aviation camp of La Comina, and dropped there 2 tons of explosives, causing a large fire. All of our and of the Allies' machines returned without any damage. On the evening of the 19th one of the enemy aeroplanes, returning from bombarding inhabited places, was brought down near Villorba (north of Treviso)."

Rome, February 21st.

"A hostile aeroplane was brought down in Val di Campomulo (Plateau of Asiago). Italian and British bombing flights have attacked and efficaciously struck the enemy aviation camps near La Comina, Aviano, Vissapadello, and Motto di Livenza. Over the last one Navy seaplane dropped 2 tons of high explosive bombs. All the machines returned without any damage. Between 7 o'clock last night and 1 o'clock in the morning enemy aeroplanes flew over our cities, causing considerable damage to their artistic patrimony. Padua was bombarded three times; numerous bombs were dropped over Vicenza, Mestre, Venice and Trebaseleghe (north-west of Mestre). Fortunately, we have to deplore but few victims among the civilians, mostly women. The anti-aircraft batteries met the enemy with an intense fire; one machine was struck, and came down aflame near Volpago. Yesterday morning one of our flights bombarded efficaciously the railway station of Innsbruck."

Rome, February 22nd.

"During the morning English aerial squadrons bombarded the enemy aviation grounds both north and south of the Oderzo-Portogruaro railway line. During the course of the day three enemy aeroplanes, brought down in the course of aerial engagements, fell respectively near Gallio, to the north of Asiago, and at Motta di Livenza. The last mentioned was brought down by British airmen."

Rome, February 23rd.

"An enemy aeroplane was shot down by one of our airmen in the vicinity of Cison; two others, struck by British airmen, fell down east of Salgarado."

Rome, February 25th.

"During the day intense aerial activity over the first lines. Four of the enemy's machines, two brought down by the French airmen and two by ours, fell in the region of Mount Grappa; a fifth, struck by our anti-aircraft batteries, came down aflame near Borso (north-east of Bassano). In the night our flights hit the railway stations of Mattarello (south of Trent) and of Primolano, while there was an intense traffic, and bombarded the enemy aviation camps near La Comina and S. Fior di Sopra. Once again hostile machines dropped bombs on inhabited places at Casteltranco, Mestre, and Venice."

Rome, February 27th.

"In the neighbourhood of Cison [at the confluence of the Cison with the Brenta] an enemy ammunition store was successfully hit by our airmen. During the night our flights have bombarded (with well-ascertained efficacy) the railway buildings of Bolzano and Pergine. Numerous hostile machines made incursions over the plains, dropping bombs on inhabited localities between Treviso and Venice, with particular fury over the latter city."

Rome, February 28th.

"During the day and night there was great aerial activity; our airmen successfully hit with 6 tons of bombs several military places. British airmen brought down two enemy aircraft, one north of Nervesa and the other north of Oderzo. Near Piave di Soligo a captive balloon was hit by our artillery. During the incursion on the night of the 27th two of the enemy bombing machines were brought down."

Rome, March 3rd.

"Adverse atmospherical conditions have forbidden for the last few days any aerial activity."

German.

Berlin, February 18th.

"On February 16th our aircraft attacked British seaplanes in the southern downs. The seaplanes were accompanying a convoy crossing from England to Rotterdam. One of the seaplanes was brought down in flames by Lieut. Christiansen."

"In the clear, frosty weather aerial activity was very lively during the day and night. Bombs were dropped extensively on military constructions behind the enemy front. One aeroplane attacked London."

"During the last two days 16 enemy aeroplanes and two captive balloons were brought down in aerial fighting and by gunfire."

Berlin, February 19th.

"Seven enemy aeroplanes were brought down yesterday in aerial fighting. 1st Lieut. Lörzer obtained his 21st victory in the air, and Lieut. Udet and Lieut. Kroll obtained their 20th victories."

Berlin, February 22nd.

"During the last three days 24 enemy aeroplanes and two captive balloons have been brought down in aerial fighting and by gunfire."

Berlin, February 27th.

"There were a great many violent duels in the air. An attack by English airmen against our balloons—between the Oise and the Aisne, broke down. Yesterday we brought down 15 enemy aeroplanes and three captive balloons. Capt. Ritter von Tustschek obtained his 24th victory in the air. In one flight Private Kaffner brought down two captive balloons."

Berlin, March 1st.

"An enemy air raid on Courtrai caused considerable losses among the Belgian population."

Berlin, March 2nd.
"Captain Ritter von Tutschek obtained his 25th victory in the air by bringing down an enemy captive balloon."

Vienna, February 28th.
"As a reprisal for the Italian air raid on the open town of Innsbruck our flying squadrons on the night of February 26th-27th dropped bombs on the railway

stations and the military constructions of the naval port of Venice. It was clearly observed that many hits were obtained which resulted in fires."

Constantinople, February 24th.
"In an aerial encounter we shot down one enemy aeroplane."

Constantinople, February 26th.
"Euphrates Front.—Enemy airmen attacked Hit and Salihie without success."



QUESTIONS IN PARLIAMENT.

Capital for Aircraft Manufacturers, &c.

SIR WATSON RUTHERFORD asked the Prime Minister, in the House of Commons on February 25th, whether he will give instructions to the Air Board and the Treasury and other Government Departments to give all possible facilities to the concerns at present engaged in the manufacture of aircraft, with a view to increasing the output, and not to persist in putting impediments in the way, such as refusal of permission to increase their capital with the object of increasing output and efficiency?

MR. BONAR LAW: I do not think it necessary to issue general instructions in the sense suggested, as all Departments concerned are fully alive to the importance of increasing the production of aircraft.

Aerodrome in County Leinster.

MR. CLANCY, on February 27th, asked the Financial Secretary to the War Office, with reference to the claims of the occupiers of lands taken for aerodrome purposes in a Leinster county to be paid compensation, and particularly to the claim of one such person whose name and the particulars of whose case have been furnished to the proper authority, whether he can now say when all those persons will be paid; and whether, if the person all of whose lands have been taken is not paid before it is too late for him to acquire other lands and is thereby deprived of a whole year's opportunity of making a living, he will be compensated for this loss in addition to the compensation to be paid to him for the value of his lands?

MR. MACPHERSON: This matter is being dealt with as expeditiously as the exceptional circumstances of land tenure in Ireland admit, and I regret I am not in a position to say anything definite as to the precise basis of compensation. With regard to the latter part of my hon. friend's question, the point has not yet arisen, and it is hoped that it will not arise.

Anti-Aircraft Defences and First Aid.

MAJOR CHAFFLE asked the Under-Secretary of State to the Air Ministry whether he will see that complete kits of first-aid requisites are provided to gun teams employed on the anti-aircraft defences of London, in order to meet the need arising from the many minor injuries that occur at a time when medical attendance is not easily and promptly obtainable?

MR. MACPHERSON: First-aid outfits are provided for gun teams employed on the anti-aircraft defences of London, in addition to which each man is provided with a first field dressing. Medical officers are also detailed for special duty with the troops during air raids.

Medical Advisory Council.

MAJOR DAVIES asked the Under-Secretary of State to the Air Ministry whether the administrative member of the Medical Advisory Committee to the Air Council will be given a seat on the Air Council; and whether he will have direct access to the President of the Air Council?

COL. GIBBS: The answer to the first part of the question is in the negative and to the second in the affirmative.

Ayrshire Aerial Gunnery School.

MR. SHAW asked the Financial Secretary to the War Office whether, in the initial stages of the Loch Doon scheme, any representations were received by the military authorities in Scotland from private persons acquainted with the site to the effect that parts of that site were sometimes flooded to a depth of 5 or 6 ft., and that parts of the road were sometimes so flooded as to stop all vehicular traffic; and whether any action was taken upon these representations?

MR. FORSTER: Inquiry will be made, but it seems unlikely that such representations could have been made in the initial stages of the scheme, as the original scheme was situated in a part of the country where there was practically no vehicular traffic. I have answered my hon. friend's three questions, but I think he will agree with me that detailed investigation into this matter cannot be conducted satisfactorily by question and answer in this House. The recent debates showed a disposition on the part of the House to leave further inquiries to the Committee presided over by my hon. friend the member for the Cleveland Division, and I hope he will now await the Committee's Report.

MR. SHAW asked whether an attempt was made in connection with the Loch Doon scheme to alter the level of Loch Bogton; and whether white glazed tiles were employed for the work, and at what cost?

MR. FORSTER: The original scheme for the School of Aerial Gunnery, as put forward by the R.F.C. authorities, contemplated only works in the vicinity of Loch Doon. After these works had been in progress for about six months the R.F.C. authorities urged the construction of an aerodrome some three miles further down the valley at the shores of Bogton Loch. To drain this site (which formed no part of the original scheme) every endeavour was made to drain the land, and by straightening out a bend in the river Doon to lower the level of the loch, thus increasing the area of the flying ground. The presence of a bed of peat on this diversion necessitated lining a portion of the channel with a network of tiles, but these were not white glazed tiles. The cost of the work will be reported in due course. It was only in deference to the strongly expressed wish of the R.F.C. authorities that work was, at the late stage of progress, undertaken at Bogton, where it was known that flooding often occurred, and it was essential that every step possible should be taken to reduce that flooding to a minimum by diversion of the stream, &c.

MR. SHAW asked at what stage a committee of civil engineers was asked to report upon the work at Loch Doon School of Aerial Gunnery; whether the question of the suitability of the site was expressly excluded from their terms of reference; and whether their report will be made available to members of Parliament or the public?

MR. FORSTER: It should be explained that from the very first a civil engineer of special experience in roads and drainage was selected to be superintending engineer of the work under the Director of Fortifications and Works, and he was authorised to consult with local engineers as to the possibilities of the works, and did actually do so. The Committee of the Institute of Civil Engineers was asked to report on the work after it had been in progress for about a year. This Committee was not asked to assemble specially for the Loch Doon works, but for various large works throughout the country, of which Loch Doon was one. The question of the suitability of site was excluded from their terms of reference, in so far as this affected aviation, the reasons for the selection having been decided not by the Works Department but by the R.F.C. authorities. I will consider the question of making copies of their report available for members.

Agricultural Labour for Aerodromes.

MR. PERRO, on February 28th, asked the Under-Secretary of State to the Air Ministry whether he is aware that, as a result of the high wages paid for unskilled labour on aerodromes in Kent, farms in the neighbourhood are being denuded of the necessary agricultural labour; and what steps are being taken to prevent the consequent difficulties placed in the way of farmers?

COL. GIBBS: Yes, sir; I am aware of the complaints that have been received on this matter, and instructions have been issued to contractors that they are to engage labour exclusively through the medium of Employment Exchanges. The latter are being directed not to send forward for employment on aerodrome construction men whose last employer was a farmer or who are known to be agricultural labourers.

MR. G. LAMBERT: Does that apply to all Government contractors?

COL. GIBBS: I am afraid I cannot answer that myself.

MR. THOMAS: Is not the real solution for the farmers to pay higher wages?

Air Raids (German Towns).

MR. BILLING asked the Prime Minister whether his attention has been called to the statement by the Secretary of State for War to the effect that he was opposed to a policy of bombing German towns; and, if so, whether he will consider the desirability of putting a soldier in charge of the War Office?

MR. BONAR LAW: The answer is in the negative.

MR. BILLING: Are we to understand that the answer is in the negative to the effect that the Secretary of State for War is in favour of bombing German towns?

MR. BONAR LAW: No; the question put to me is whether my attention has been called to a statement of his. To that the answer is in the negative. I believe there is no foundation for the other suggestion either.

MR. BILLING: Are we to understand that Lord Derby is in favour of bombing German towns?

MR. BONAR LAW: If the hon. member chooses to put a question on that subject, he will get an answer.

British Officers in Holland.

INCLUDED in the party of British prisoners who arrived in Holland from Germany last week for internment were Capt. H. G. L. Mayne, 1st K.O.S.B., attd. R.F.C., and Lieut. K. Rawson-Shaw, R.F.C.

In the party which arrived at Scheveningen on March 1st for internment were Lieut. M. R. Chidson, R.G.A., attd. R.F.C., and Capt. G. Humphreys, R.F.C.

Fatal Mishap to Flying Officer.

"ACCIDENTALLY suffocated" was the verdict at the inquest on March 2nd on Captain S. C. Tinne, M.C., R.F.C., who was found dead in a hotel at Hythe with an elastic band round his neck. It was suggested that Captain Tinne, who was fond of theatricals, in rehearsing a part placed the band round his neck, that it then contracted and choked Captain Tinne before he could reach the door.

Hospitality for Overseas Officers.

AMONG the arrangements made by the Committee Welcome for officers from beyond the seas, instituted by the Royal Automobile Club, are weekly entertainments to be held every Friday, commencing to-morrow, March 8th. They will be held in the Great Gallery of the R.A.C. at 4.30 p.m., tea being served at 4.15 p.m. All officer members, with their relatives and friends, will be most welcome. In-

vitations will be sent to officers, but as no exact list can be kept owing to most of them being on leave, those officers who do not receive invitations are requested to apply for them at the Inquiry and Information Bureau at the Club, which is now open. All information as to entertainments, both inside and outside the Club, free tickets to theatres and music-halls, visits to industrial centres and other places of interest in London and elsewhere, can be obtained from the Bureau.

Gifts for the Labour Companies.

THE men of the Labour Companies who are doing such fine work behind the lines in France will be gratified to hear that the Fund, of which Lady Cowdray is President, for supplying them with gifts is to be kept open during the year. It is hoped that every one who can will assist the good work by sending a subscription to the Hon. Treasurer, Mrs. Hopkinson, at 10, Victoria Street, Westminster, S.W. 1.

Leading Belgian Pilot Missing.

IN the course of a fight with four German airmen on February 23rd, the machine of Lieutenant Thiery, the Belgian "Ace," was seen to fall in flames, within the enemy's lines behind Deuman on the Dixmude-Ypres road. It is hoped that he is only wounded. Lieutenant Thiery was officially credited with the bringing down of 10 machines.

DUTCH AND SALVED SEAPLANES.

A WHITE PAPER published on March 2nd gives the correspondence between the Foreign Office and the Dutch Government relating to the internment of British seaplanes, &c., salved in the North Sea and taken to Dutch ports. The British Government claims that as the aircraft, &c., were taken possession of outside territorial waters, they ought, therefore, in accordance with a definite rule of international law, to have been restored forthwith to this country. This, however, the Netherlands Government have declined to do, on the ground that "if a neutral State were to restore a shipwrecked warship, its accessories, or any other war material found on its coasts or salved on the high seas and brought into its ports, to the belligerent State to which they belonged, it would incur the just reproach of having rendered to the belligerent a service incompatible with the observation of the duties of neutrality." It is contended that this line of conduct is in harmony with the principle stated in Article 6 of the 13th Hague Convention respecting the rights and duties of neutral Powers in maritime war.

In a despatch from Mr. Balfour to the British Minister at The Hague, dated December 31st last, the facts, which are not in dispute, are thus summarised:—

Part of the British naval gear recovered by Dutch agency after the sinking of the British cruisers "Cressy," "Hogue" and "Aboukir" in 1914, and detained by the Netherlands Government, was found in the high seas.

In December, 1914, a British officer and mechanic in a seaplane were forced to descend in the North Sea. They were rescued by the Norwegian steamer "Orn" and taken to the Hook of Holland with the seaplane, which was salved. The men were released and the seaplane was detained.

In April, 1916, a British destroyer, the "Medusa," was abandoned by her crew in the North Sea, and was towed by Dutch fishermen to Terschelling. The destroyer ultimately broke up, but before this occurred a quantity of stores of various kinds were salved from her. The personal effects of the officers and men were handed by the Netherlands authorities to the British Consular representative, but all the ship's gear and stores were retained in military custody.

In the same month Lieut. Beare, in a seaplane, was obliged to descend in the North Sea, and was rescued with his machine by a Dutch fishing boat and taken to a Netherlands port. The pilot was released and the seaplane interned.

In January, 1916, an even more remarkable incident took place. A British seaplane descended near the Noord-Hinder lightship and was abandoned. A boat from the lightship, seeing the machine, put off to rescue the occupants, but found it deserted. The crew of the boat therefore took it upon themselves to remove from the seaplane a Lewis machine gun and other articles, and took them to the light-

ship, whence they were sent to the mainland. The seaplane, stripped of its machine gun, was ultimately recovered at sea by the British naval authorities.

In September last occurred the incident of the seaplane manned by Lieut. Hopcroft and P.O. Garner, which is essentially similar to that of Lieut. Beare's seaplane mentioned above.

The despatch proceeds to point out: In all the cases enumerated above, with the exception of the seaplane rescued by the Norwegian steamer "Orn," Dutch subjects have—so far as is known unasked—taken possession of the property of His Majesty's Government on the high seas and carried it into Netherlands jurisdiction. On requesting the restoration of the property thus gratuitously taken from them, His Majesty's Government are met with the excuse that to release the articles would be to add to the armed strength of Great Britain, and would therefore be contrary to the neutrality of the Netherlands. The practical effect of such a ruling is that Dutch seamen, who from motives of humanity, rescue wrecked British airmen and their machines, become—no doubt, entirely contrary to their wishes or their expectations—instrumental in diminishing the armed strength of Great Britain. In the worst case noted (that in which a machine gun and other gear was removed from a seaplane by the crew of the Noord-Hinder lightship, who were Netherlands Government servants) it is difficult to perceive much difference between such conduct and the misappropriation of goods which becomes the subject of criminal proceedings. Yet the restoration of the articles thus taken is refused on the ground of neutrality.

As regards the reference made by the Netherlands Government to the terms of Article 6 of the 13th Hague Convention, His Majesty's Government can only express astonishment at being asked to consider such an argument. The article refers to the supply by a neutral to a belligerent Power of war material owned by the neutral, and has no wider scope. Furthermore, it must be observed that the seaplanes and other articles now in question would never have come into the possession of the Netherlands Government at all if they had been left alone by the Dutch subjects who brought them into the Netherlands ports. There could have been no question of the Government furnishing any of the articles to His Majesty's Government had they simply refrained from impounding goods which no rule of international law required them to seize.

I request that you will address a note in the above sense to the Netherlands Minister for Foreign Affairs, stating that His Majesty's Government are unable to perceive any force in the arguments by which he seeks to defend the action of his Government, and at the same time reiterate the request for the release and return of the articles in question.



German Fear of Air Raids.

ACCORDING to a message dated February 28th, from Munich to the *Cologne Gazette*, the Social Democrats introduced an interpellation in the Bavarian Lower House on the subject of the damage caused by Allied air raids. It was asked: "Is the State Government aware that the population of Bavaria, and especially that of the Palatinate, has to suffer very heavy material damage from aerial attacks which are constantly increasing? What does it contemplate doing to make good the damage to those concerned?" An accompanying memorandum says: "The attacks of hostile airmen, especially on a number of Palatinate towns, have recently very substantially increased. The question who has to meet these war damages has not been cleared up. A considerable expenditure arises for the owners of houses and furniture by way of private insurance at high premiums against damage by airmen."

The debate on the interpellation also dealt with a Liberal deputy's resolution, urging the necessity of a law providing for indemnification by the Imperial authorities for personal injuries and material damage. The Minister of the Interior, Herr Brettreich, replying to the interpellation, admitted that the Palatinate had been considerably involved in recent aerial attacks, and he endeavoured to assure the deputies on the subject of indemnification for damage and cost of insurance. He said incidentally: "I would like to state for your assurance that little is to be feared from enemy incendiary bombs on our field crops. Germany did not begin aerial attacks in this war. When our enemies cease attacks we shall also cease ours. With us it is mostly a matter of reprisals against which our enemies make unjustified aerial attacks on open towns."

The matter was also raised in the Reichstag, when Herr

Schultz, a Radical, said that air attacks over open towns only prolonged the war, because they increased reciprocal hatred. He suggested that the Government should take the initiative for an international arrangement prohibiting air raids outside the military zones.

German Aerial Traps.

SOME details are given by the frontier correspondent of the *Telegraaf* of a new method adopted for catching hostile airmen which the Germans are employing at Zeebrugge. Towards evening, it is said, they send up 20 captive balloons, without crews, and attached to electrified steel cables. The electric barrier thus created is claimed to constitute a great danger to all airmen coming into contact with it.

A Hovering German Aeroplane.

THE same authority asserts that the Germans have also manufactured a new and improved type of aeroplane fitted with three propellers, one being so arranged that it can keep the aeroplane for some time stationary above a certain point, thus permitting the bomb-thrower to aim with greater accuracy.

Larger Gothas.

It is stated that the "large enemy" aeroplane, which it was announced in a recent official *communiqué* had been brought down in the sea, was fitted with four 260 h.p. engines, with two propellers in front and two behind, its span being about 130 feet, a crew of five being carried.

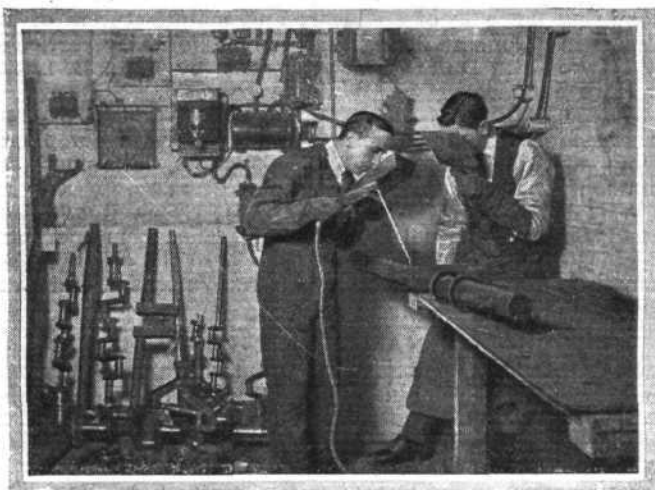
A Raid on Petrograd.

PROBABLY by way of stimulating the Bolsheviks of Petrograd to hurry their delegates to sign the peace treaty, a German aeroplane dropped bombs on several parts of Petrograd on March 3rd. Three people were killed and five wounded, but the material damage was not serious.

SIDE-WINDS.

A MOST interesting booklet has just been published by the Committee of the British Ignition Apparatus Association. It tells of the splendid work which has been done by the members of the Association in providing the great number of magnetos necessary for the motor transport and aircraft services, and sets forth some of the difficulties which have been met and successfully dealt with. One reason of the success is the co-operation of the various firms in the standardisation of the fittings and parts such as screws, &c. There are six standard

as a mark of repute for all classes of tapes and webs, and to meet the demand for national purposes the mills are kept going at full pressure. The firm's policy is to carry large stocks, and as they have depôts in Manchester, London, Belfast, and Glasgow, they are literally "on the spot" with the goods. Their depôt in London is under the management of Mr. E. W. Macbay, who is well known to all buyers in the Aero trade in London and the South of England, and gives his personal and prompt attention to all orders and enquiries. Should it ever

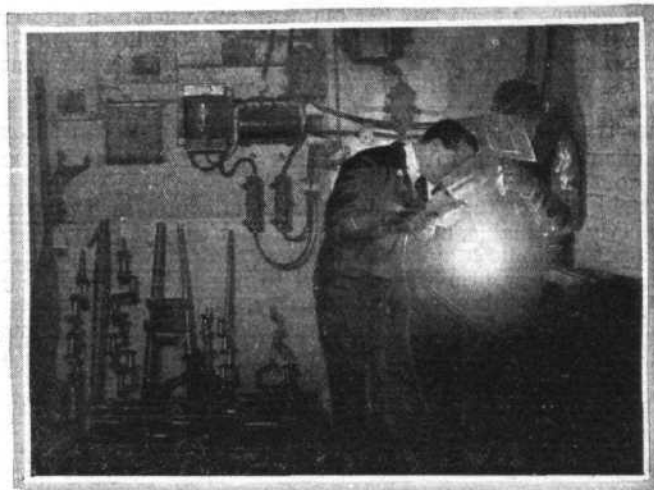


BARIMAR ELECTRIC WELDING.—The expert operators preparing a job for welding.

British types for motor cycles, three for motor cars, seven for aero engines, two for stationary and marine engines as well as others for farm and gas engines, &c. Illustrations are given of the various types, while the book is further illustrated by a number of pictures, including one in colours of a Zepp. being brought down in flames. Any one who would like a copy should write to the Publicity Department, British Magnetos, 8, Bream's Buildings, London, E.C. 4.

NAPIERS were well to the fore on "Welsh" flag day in London, as a large number of the badges and silk flags which were sold for the National Fund for Welsh troops bore a representation of a Napier aeroplane.

SYNONYMOUS with tapes, the name "North Hardy" is well known throughout the Electrical and Aero Trades,



BARIMAR ELECTRIC WELDING.—The weld in progress.

happen that they should be out of stock of any width, they are in a good position to give speedy delivery.

A FURTHER development of Barimar, Ltd., the London scientific welders, to meet the ever-increasing need for repairs to motors and all kinds of machinery is the installation of a new plant for electric welding, in addition to their own processes. The electric system is applicable to the speedy, perfect repair of broken shafts of all kinds, tappets, valves, steel gear and crown wheels with broken teeth, pistons, connecting rods, malleable castings, cast and mild steel, iron bars, rods and plates. Readers who are interested in welding should apply to Barimar, Ltd., 10, Poland Street, London, W. 1, for a copy of their new treatise "The Welding Test," and enclose 6d. in stamps. A copy is sent free of cost to machinery users who have fractured metal parts to repair.

BOOK REVIEWS.

"A Subaltern's Share in the War."

THE share of George Weston Devenish in the Great War commenced on the day when war was declared, and it ended on June 6th, when he was reported "missing." In those three years he had taken part in three of its phases, first in the R.F.A., then as an observer in the R.F.C., and finally as a pilot. In all three he acquitted himself well, and the extracts from his letters home which go to make up the volume bearing the above title give many interesting glimpses of the life at the front, under these different conditions. The letters written during the time he was an observer and pilot contain many interesting comments, and make the reader wish for more. Thus, when acting as observer, he writes: "It's a funny game this job. One's somehow detached from the ordinary vulgar war that's going on between the opposing infantry and artillery and their immediate hangers-on. We've got quite a separate war of our own, and look upon everything from a different point of view."

"Take Archie, for instance; on the ground it used to be quite a pleasant summer evening's diversion to watch him at work, and see the planes dodging about from him; in the air it's almost impossible to extract any pleasure from him."

Later on another impression of Archie is given from the pilot's point of view: "We got our first Archiving, though only one shot was much good. I find I've got quite unused to Archie. I've also come to the conclusion (which I strongly suspected before) that he is much more unpleasant for a pilot than for an observer. As an observer you know that there is nothing you can do to stop his hitting you if he wants to, whereas it's up to the pilot to dodge the machine in such a way that he can't. The observer has a delightful irresponsibility; at least I always used to feel that."

"Extreme cheerfulness in all circumstances" was the "chief characteristic" put down to Lieut. Devenish in his first Woolwich report, and right through his letters this spirit is reflected. When he has been recounting some more or less unpleasant experience, he passes on with "Still, it wasn't too bad," and it is no wonder that wherever he went he quickly made friends.

The book is published by Messrs. Constable at 3s. 6d. net.

"Aluminium and its Congeners."

ALUMINIUM plays such a large part, in one way and another in connection with aircraft work that many will welcome the volume dealing with the subject which has just been added to the "Textbooks of Inorganic Chemistry" published by Messrs. Griffin and Co., Ltd. This series of textbooks is edited by Dr. J. Newton Friend, and the volume on aluminium, &c., which forms No. IV, has been written by Mr. K. F. V. Little, B.Sc., A.R.C.S., the chief chemist at Thorium, Ltd. It aims at giving a tolerably complete and readable account of the inorganic chemistry of the elements of the third group of the Periodic Table, together with cerium and the trivalent rare earth elements. Where they are of particular interest or importance, however, various organic compounds of these elements have also been described. So far as possible, without overburdening the text, the results of modern physico-chemical work have been included. What students will value especially is the very complete and comprehensive bibliography which is included in the shape of footnotes to the discussions, which are necessarily brief, on mineralogical, technical and analytical questions. The price of the book is 15s. net.

LEGAL INTELLIGENCE.

Similarity in Trade Names.

In the Chancery Division of the High Court, of Justice on March 1st, Mr. Justice Neville heard the action in which the A.G.S. Manufacturing Co., Ltd., by their writ claimed an injunction to restrain the Aeroplane General Sundries, Ltd. from carrying on business in or advertising or selling their goods under the name of A.G.S. (Limited), or any other name or title calculated to interfere with the business of the plaintiffs, or to pass off the goods of the defendants as the goods of the plaintiffs.

On February 22nd last the plaintiffs moved for an interim injunction in the terms of their writ, and after discussion the motion stood over for a week with a view to a settlement, but the parties had failed to come to an arrangement.

The plaintiffs now asked for an order.

Mr. Jenkins, K.C., for the defendants, said that although his clients adhered to the offer that they had made on the previous hearing, which had not been accepted, they submitted on the evidence that the advertisements complained of were perfectly justifiable, and they denied that they were trying to induce the public to apply to them as the plaintiff company. No company or firm was entitled to use the letters A.G.S. as their own in this particular industry. The letters were part of the English language and did not constitute a fancy name, nor had they in a secondary sense come to mean the plaintiff company.

Mr. Ward Coldridge, K.C., and Mr. Lavington, for the plaintiffs were not called on to reply.

In his judgement, Mr. Justice Neville, said:—This is a curious case. Many people in the aeroplane industry know that the letters A.G.S. refer to a particular category of goods in which both the plaintiffs and the defendants deal, and whether the plaintiffs will ultimately succeed in establishing their claim I do not decide now, and I express no opinion whatever upon it. But what I am dealing with now is, in my opinion, an attempt by the defendants to obtain for themselves something that belongs to the plaintiffs' title. There is no objection to the use of the letters A.G.S., but the defendants in their advertisements are using them in every possible way to mean and to point to their company. In one advertisement they say that the letters A.G.S. "stand for the A.G.S. Company (Limited)." In another they say that the letters A.G.S. are the official name for their company. It would be wrong to permit such advertisements to continue, and in my opinion the law does not prevent me from granting an injunction, which I now do, restraining the defendants, their servants, or agents, from representing by advertisement or otherwise that the letters A.G.S. stand for or are otherwise the name of the defendant company. Owing to the way in which the defendants have behaved I make the plaintiffs' costs of this motion their costs in any event.

The Rumpler C. IV Biplane.

In connection with the description of the Rumpler C. IV biplane which appeared in our issue of February 21st, we regret that, by an oversight, it was not stated that for the information upon which it was based we were indebted to the courtesy of the editor of our French contemporary, *L'Aerophile*.

The New "Hazell Annual."

THE success of the "Hazell Annual" has again necessitated a further increase in size, and for 1918 the purchaser gets some 920 pages of closely-printed matter for his five shillings, the price having had to go up temporarily. It is still, however, excellent value and crammed full of facts as it is. What makes it especially useful is a copious index. There is an extensive section devoted to aviation, including a list of all raids by aeroplanes and Zeppelins, and other useful information. Apart from the usual reference information which has won for Hazell a leading place in this class of volume, new features this year are a useful Knightage and Companionship of the various Orders of Knighthood; a Medical Review of the year bearing especially on the war, and a comprehensive article on Labour and Socialism, with special relationship to the condition of affairs in France, Germany, Russia and Sweden.

PUBLICATIONS RECEIVED.

A Dictionary of Aircraft. By W. E. Dommett, A.F.Ae.S. London: Electrical Press, Ltd., 13-16, Fisher Street, W.C. 1. Price 2s. net (post free 2s. 1d.).

Airfare of To-day and of the Future. By Edgar C. Middleton. London: Constable and Co., Ltd. Price, 3s. 6d. net.

NEW COMPANIES REGISTERED.

EXPRESS ENGINEERING WORKS, LTD., 7, Great St. Helens, E.C.—Capital £10,000, in £1 shares. Engineers manufacturers of boilers, aircraft and munitions, &c.

GENERAL TRADING AND DEVELOPMENT CO., LTD.—Capital £5,000, in £1 shares (2,500 pref.). Merchants, ironfounders, engineers, manufacturers of aeroplanes, dirigibles, aircraft, automobiles, &c. First directors:—A. de Duve, E. F. de Vlieger and G. Teygeman.

VALLEY ENGINEERING AND METAL CO., LTD.—Capital £3,000, in 2,800 7 per cent. cumulative preference shares of £1 each and 4,000 ordinary shares of 1s. each. Acquiring business of engineers and manufacturers of and dealers in aeroplane fittings and valves, formerly carried on by Rawson and Duffus, and afterwards by F. L. B. Locke, at Harpenden, as the Valley Engineering Co.

WELDON ENGINEERING CO., LTD.—Capital £50,000, in £1 shares. Manufacturers of and dealers in aeroplanes, flying machines, airships, &c. Solicitors, Simmons and Simmons, 74, Cheapside, E.C.

WHITEHEAD MOTORS, LTD., 61, Grena Road, Richmond, Surrey.—Capital £2,000, in £1 shares. Manufacturers of and dealers in internal combustion, aero and other engines, machines, &c. First directors: J. A. Whitehead and L. D. Coupland.

BUSINESS NAMES REGISTRATIONS.

Y. GOLDBERG.—Registered January 4th, 1898. Plywood, timber and veneer Manufacturer and importer, and manufacturer of plywood for aeroplane contractors, 7, Kingsland Road, Shoreditch, E.2. Proprietor: H. Goldberg (Russian), 72, Brooke Road, Stoke Newington, N.16.

RANLAGE AERO ENGINEERING CO.—Registered January 5th, 1898. Manufacturers of aircraft metal parts, welding and general engineers, 16, Maxwell Road, King's Road, Fulham. Business commenced December 20th, 1917. Partners: (1) C. W. Lerner (British), 89, Queen's Road, Peckham. (2) A. J. Holmes (British), 5, Tennyson Mansions, Queen's Club Gardens, West Kensington.

Aeronautical Patents Published.

Applied for in 1916.

The numbers in brackets are those under which the Specifications are printed and abridged, &c.

Published March 7th, 1918.

7130. T. ANTOINE. Flying-machines. (113,100.)

Applied for in 1917.

The numbers in brackets are those under which the Specifications are printed and abridged, &c.

Published March 7th, 1918.

1,879. M. SALOUN. Anti-aircraft projectiles. (113,134.)

2,335. J. W. WILSON. Hinging of ailerons and balancing of auxiliary planes. (113,153.)

2,538. C. DOWNS. Manufacture of aerial bombs, aerial torpedoes, &c. (113,157.)

If you require anything pertaining to aviation, study "FLIGHT'S" Buyers' Guide and Trade Directory, which appears in our advertisement pages each week (see pages xlviii, xlix and l).

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